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UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

IMMUNEX CORPORATION; AMGEN MANUFACTURING, LIMITED; and HOFFMAN-LA ROCHE INC., Plaintiffs, v. SAMSUNG BIOEPIS CO., LTD., Defendant.	Civil Action No. 19-11755 (CCC)(MF) (Filed Electronically)

SAMSUNG BIOEPIS'S ANSWER AND AFFIRMATIVE DEFENSES

Samsung Bioepis Co., Ltd. ("Samsung Bioepis"), by and through its attorneys, hereby submits its Answer and Affirmative Defenses to the Complaint filed by Plaintiffs Immunex Corporation, Amgen Manufacturing, Ltd., and Hoffman-La Roche, Inc. (collectively, "Plaintiffs").

ANSWER TO PLAINTIFFS' COMPLAINT

Pursuant to Fed. R. Civ. P. 8(b)(3), Samsung Bioepis denies all allegations in Plaintiffs' Complaint except those specifically admitted below. More specifically, Samsung Bioepis denies it infringes any valid, enforceable, and properly construed claims of United States Patent Nos.

8,063,182 ("the '182 patent) and 8,163,522 ("the '522 patent") (collectively, the "Roche Patents"), U.S. Patent Nos. 7,915,225 ("the '225 patent"), 8,119,605 ("the '605 patent), and 8,722,631 ("the '631 patent) (collectively, "the Immunex Patents"), denies that there is any basis for this suit, denies that Plaintiffs are entitled to any relief, and denies all allegations not specifically admitted in this answer.

I. THE PARTIES

A. Plaintiffs

1. Immunex Corporation ("Immunex") is a corporation organized and existing under the laws of the State of Washington with its principal place of business at One Amgen Center Drive, Thousand Oaks, California 91320. Amgen Inc. acquired Immunex in July 2002, and Immunex became a wholly-owned subsidiary of Amgen Inc.

ANSWER: Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 1, and therefore denies the same.

2. Amgen Manufacturing, Limited ("AML") is a corporation existing under the laws of the Territory of Bermuda, with its principal place of business at Road 31 km 24.6, Juncos, Puerto Rico 00777. AML is a wholly-owned subsidiary of Amgen Inc.

ANSWER: Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 2, and therefore denies the same.

3. Hoffmann-La Roche Inc. ("Roche") is a corporation organized and existing under the laws of the State of New Jersey with its principal place of business at 150 Clove Road, Suite 8, Little Falls, New Jersey 07424.

ANSWER: Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 3, and therefore denies the same.

4. On information and belief, Bioepis is a corporation organized and existing under the laws of South Korea, with its principal place of business at 107, Cheomdan-daero Yeonsu-gu Incheon, 406-840 South Korea. On information and belief, Bioepis develops, manufactures, and seeks regulatory approval for biosimilar products, and imports, markets, distributes, offers to sell, and sells those biosimilar products in the State of New Jersey and throughout the United States.

ANSWER: Samsung Bioepis admits it is a corporation organized and existing under the laws of South Korea, with its principal place of business at 107, Cheomdan-daero Yeonsu-gu Incheon, 406-840 South Korea. Samsung Bioepis admits it develops biosimilar products and has sought regulatory approval for biosimilar products in the United States. Samsung Bioepis denies the remaining allegations of paragraph 4.

II. NATURE OF THE ACTION

5. This is an action for patent infringement arising under 35 U.S.C. § 271, including § 271(e)(2)(C)(ii), which was enacted in 2010 as part of the Biologics Price Competition and Innovation Act ("the BPCIA"), and for relief under the BPCIA. This action involves patents that cover etanercept (the active ingredient of the biologic drug product, ENBREL®), its method of manufacture, certain materials used in its manufacture, and certain approved therapeutic uses of etanercept. Immunex and AML (collectively, "Immunex/AML") and Roche bring this suit to enjoin Bioepis from infringing their patents and to secure any recoverable damages resulting from Bioepis's infringement.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits that Plaintiffs' Complaint purports to be a civil action for patent infringement and, in particular, arising under § 271(e)(2)(C)(ii). Samsung Bioepis specifically denies the Patents-in-Suit are valid and enforceable patents that are or will be infringed by Samsung Bioepis. Samsung Bioepis denies the remaining allegations of paragraph 5.

6. The asserted patents (collectively, "the Patents-in-Suit") are as follows:

- United States Patent Nos. 8,063,182 ("the '182 Patent") and 8,163,522 ("the '522 Patent") (collectively, the "Roche Patents"); and

- U.S. Patents Nos. 7,915,225 ("the '225 Patent"), 8,119,605 ("the '605 Patent"), and 8,722,631 ("the '631 Patent") (collectively, "the Immunex Patents").

ANSWER: Samsung Bioepis admits the Complaint identifies the Patents-in-Suit as U.S. Patent Nos. 8,063,182 ("the '182 Patent"); 8,163,522 ("the '522 Patent"); 7,915,225 ("the '225 Patent"); 8,119,605 ("the '605 Patent"); and 8,722,631 ("the '631 Patent"). Samsung Bioepis

specifically denies the Patents-in-Suit are valid and enforceable patents that are or will be infringed by Samsung Bioepis. Samsung Bioepis denies the remaining allegations of paragraph 6.

7. Roche owns the '182 and '522 Patents. Immunex is the exclusive licensee of all commercial rights in the Roche Patents, including all rights to sell ENBREL® in the United States and its territories.

ANSWER: Samsung Bioepis admits the '182 and '522 patents identify Roche as the assignee of these patents. Samsung Bioepis is without sufficient knowledge or information to admit or deny the remaining allegations in paragraph 7, and therefore denies the same.

8. Immunex owns the '225, '605, and '631 Patents.

ANSWER: Samsung Bioepis admits the '225, '605, and '631 patents identify Immunex as the assignee of these patents. Samsung Bioepis is without sufficient knowledge or information to admit or deny the remaining allegations in paragraph 8, and therefore denies the same.

9. Immunex has granted AML an exclusive license (or, with respect to the '182 and '522 Patents, an exclusive sublicense) to the Patents-In-Suit.

ANSWER: Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 9, and therefore denies the same.

10. According to files available at https://www.accessdata.fda.gov/scripts/cder/daf/index.cfm?event=overview.process&ApplNo=761066, on April 25, 2019, the U.S. Food and Drug Administration ("FDA"), approved Bioepis's abbreviated Biologics License Application 761066 ("aBLA"). On information and belief, Bioepis submitted that aBLA pursuant to the BPCIA, specifically 42 U.S.C. § 262(k) (also known as § 351(k) of the Public Health Service Act ("PHSA")), seeking authorization from the FDA to engage in the commercial manufacture, use, or sale of a biosimilar version of Immunex's ENBREL®, which Bioepis calls Eticovo (etanercept-ykro).

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar

product, ETICOVO™ (etanercept-ykro) injection. Samsung Bioepis admits the FDA approved Samsung Bioepis's BLA No. 761066 on April 25, 2019. Samsung Bioepis denies the remaining allegations of paragraph 10.

11. The BPCIA created an abbreviated pathway for the approval of biosimilar versions of approved biologic drugs. Subject to certain conditions, the abbreviated pathway (also known as "the (k) pathway") permits a biosimilar applicant (here, Bioepis) to rely on the prior clinical tests, data, and results, and the prior licensure and approval status, of the innovative biological product (here, ENBREL®). Immunex is the sponsor of the reference product, ENBREL®, which the FDA has approved for a number of different indications (i.e., therapeutic uses).

ANSWER: Samsung Bioepis admits Immunex is the reference product sponsor for ENBREL®. Samsung Bioepis admits ENBREL® is FDA approved to treat rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis. The remainder of paragraph 11 contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis denies all characterizations of the law, including statutes, and denies the allegations of paragraph 11.

12. As alleged herein, Bioepis infringed the Patents-In-Suit under 35 U.S.C. § 271(e)(2)(C)(ii) when it submitted its aBLA seeking FDA approval to engage in the commercial manufacture, use or sale of Bioepis's etanercept biosimilar product before the expiration of the Patents-In-Suit.

ANSWER: Denied.

13. As alleged herein, Bioepis would also infringe one or more claims of each of the Patents-In-Suit, under 35 U.S.C. § 271(a), (b), and/or (g), should it make, use, offer for sale, or sell within the United States, or import into the United States Bioepis's etanercept biosimilar product before the expiration of the Patents-In-Suit.

ANSWER: Denied.

III. JURISDICTION AND VENUE

A. Subject-Matter Jurisdiction

14. This Court has subject-matter jurisdiction over Immunex/AML and Roche's claims under 28 U.S.C. §§ 1331, 1338(a), 2201(a), and 2202.

ANSWER: Samsung Bioepis admits that this Court has subject matter jurisdiction over the patent infringement claims in Plaintiffs' Complaint under 28 U.S.C. §§ 1331 and 1338(a). Samsung Bioepis denies the remaining allegations of paragraph 14.

B. Personal Jurisdiction

15. This Court has personal jurisdiction over Bioepis by virtue of the fact that, on information and belief, Bioepis filed an aBLA seeking approval from the FDA to engage in the commercial manufacture, use or sale of Bioepis's biosimilar product in the State of New Jersey and throughout the United States, which directly gives rise to Plaintiffs' claims of patent infringement. On information and belief, the FDA approved that application on April 25, 2019.

ANSWER: Samsung Bioepis admits it submitted Biologics License Application No. 761066 seeking FDA approval of its etanercept biosimilar product, and the FDA approved that application on April 25, 2019. Samsung Bioepis states that, for purposes of this action only, Samsung Bioepis will not challenge the Court's exercise of personal jurisdiction over it for adjudicating Plaintiffs' patent claims, but expressly reserves the right to contest personal jurisdiction in any other case with any party, including Plaintiffs.

16. On information and belief, Bioepis, by itself or through others, intends to use, induce others to use, offer for sale, sell within the United States, and import into the United States, including the District of New Jersey, its etanercept biosimilar product.

ANSWER: Denied.

17. This Court also has personal jurisdiction over Bioepis by virtue of Bioepis's contacts with New Jersey and the exercise of such personal jurisdiction is fair and reasonable. Litigating this suit in New Jersey does not burden Bioepis. For example, Bioepis did not object to personal jurisdiction when sued by another patent holder in this district. *Janssen Biotech, Inc. v. Samsung Bioepis, Co. Ltd.*, Case No. 2:17-cv-03524 (MCA).

ANSWER: Samsung Bioepis states that, for purposes of this action only, Samsung Bioepis will not challenge the Court's exercise of personal jurisdiction over it for adjudicating Plaintiffs' patent claims, but expressly reserves the right to contest personal jurisdiction in any other case with any party, including Plaintiffs. Samsung Bioepis denies the remaining allegations of paragraph 17.

C. Venue

18. Venue is proper in this District pursuant to 28 U.S.C. § 1391(c)(3). Bioepis is a foreign corporation and is therefore subject to suit in any judicial district. *Brunette Machine Works, Ltd. v. Kockum Industries, Inc.*, 406 U.S. 706, 713-14 (1972); *In re HTC Corp.*, 889 F.3d 1349, 1357-58 (Fed. Cir. 2018), *cert. denied*, 139 S. Ct. 1271 (2019).

ANSWER: Samsung Bioepis states that, for purposes of this action only, Samsung Bioepis will not challenge whether this judicial district is a proper venue for this action, but otherwise denies the allegations of paragraph 18.

IV. BACKGROUND

A. TNF and TNF Receptors

19. Tumor necrosis factor ("TNF") is a cell-signaling protein involved in various biological effects that include the regulation of immune response, inflammation, and other processes. Scientists first identified it as a biological factor that was toxic to tumor cells; hence the name "tumor necrosis factor." The body's overproduction of TNF is also implicated in various autoimmune diseases and other inflammatory disorders.

ANSWER: Samsung Bioepis admits the allegations contained in paragraph 19.

20. TNF's biological effects can be mediated via specific TNF receptors on the membranes of certain cells. Such TNF receptors can specifically bind to TNF. This binding can trigger reactions inside the cell, which can give rise to a number of different responses, including inflammation, cell growth, and cell death.

ANSWER: Samsung Bioepis admits the allegations contained in paragraph 20.

21. The TNF receptors include: an extracellular region that binds to its ligand, TNF; a transmembrane region that anchors the receptor onto the cell membrane; and an intracellular region that provides signaling inside the cell. In the body, using natural biological processes, and in the lab, using biochemical techniques, the TNF-binding extracellular region can be cleaved from the cell membrane, leaving a TNF-binding soluble fragment of the TNF receptor.

ANSWER: Samsung Bioepis admits the allegations contained in paragraph 21.

22. Scientists knew, at the time of the filing of the Patents-In-Suit, that there were two cell-membrane-bound receptors specific to human TNF. One of these receptors was sometimes referred to as the human "p75 TNF receptor," and the other as the human "p55 TNF receptor." The p75 TNF receptor protein has an apparent molecular weight of about 75 kilodaltons on a non-reducing SDS-polyacrylamide gel; the p55 TNF receptor has an apparent molecular weight of about 55 kilodaltons.

ANSWER: Samsung Bioepis admits the Highlights of Prescribing Information for ENBREL® (Revised 12/2012), available at https://www.accessdata.fda.gov/drugsatfda_docs/label/2012/103795s5503lbl.pdf, states: "Two distinct receptors for TNF (TNFRs), a 55 kilodalton protein (p55) and a 75 kilodalton protein (p75), exist naturally as monomeric molecules on cell surfaces and in soluble forms." Samsung Bioepis is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations contained in paragraph 22, including because of the vague and indefinite wording used therein, and therefore denies the remaining allegations of paragraph 22.

B. Immunex's Investment in ENBREL® (etanercept)

23. Etanercept, the active ingredient in ENBREL®, is a dimeric fusion protein consisting of the extracellular ligand-binding portion of the human 75 kilodalton (p75) tumor necrosis factor receptor linked to the Fc portion of human IgG1. The Fc component of etanercept contains the CH2, the CH3, and hinge, but not the CH1 domain of IgG1. Etanercept is produced by recombinant DNA technology in a Chinese hamster ovary (CHO) mammalian cell expression system.

ANSWER: Samsung Bioepis admits the Highlights of Prescribing Information for ENBREL® (Revised 12/2012), available at https://www.accessdata.fda.gov/drugsatfda_docs/label/2012/103795s5503lbl.pdf, states:

> Enbrel (etanercept) is a dimeric fusion protein consisting of the extracellular ligand-binding portion of the human 75 kilodalton (p75) tumor necrosis factor receptor (TNFR) linked to the Fc portion of human IgG1. The Fc component of etanercept contains the C_H2 domain, the C_H3 domain and hinge region, but not the C_H1 domain of IgG1. Etanercept is produced by recombinant DNA technology in a Chinese hamster ovary (CHO) mammalian cell expression system.

Samsung Bioepis is without knowledge or information sufficient to form a belief as to the truth of any remaining allegations contained in paragraph 23 and, on that basis, denies these allegations.

24. By binding to and inhibiting TNF from interacting with TNF receptors, etanercept can reduce certain inflammatory responses implicated in certain conditions such as rheumatoid arthritis, psoriasis, psoriatic arthritis, and others.

ANSWER: Samsung Bioepis admits the Highlights of Prescribing Information for ENBREL® (Revised 12/2012), available at https://www.accessdata.fda.gov/drugsatfda_docs/label/2012/103795s5503lbl.pdf, states:

> Etanercept is a dimeric soluble form of the p75 TNF receptor that can bind TNF molecules. Etanercept inhibits binding of TNF-α and TNF-β (lymphotoxin alpha [LT-α]) to cell surface TNFRs, rendering TNF biologically inactive.

In addition, Samsung Bioepis admits that ENBREL® is FDA approved for the treatment of rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis. Samsung Bioepis is without knowledge or information sufficient to form a belief about the truth of any remaining allegations contained in paragraph 24 and, on that basis, denies these allegations.

25. The FDA has approved ENBREL® for the following indications: rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis. At the time of its first approval, and since, scientists and physicians have heralded ENBREL® as a major advance in treating these disorders.

ANSWER: Samsung Bioepis admits that ENBREL® is FDA approved for the treatment of rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis. Samsung Bioepis is without knowledge or information sufficient to form a belief about the truth of the remaining allegations contained in paragraph 25 and, on that basis, denies these allegations.

26. Immunex conducted Phase I testing to determine whether ENBREL® was safe to administer to patients with rheumatoid arthritis; results published in 1993 indicated that it was.

Immunex then conducted Phase II testing to begin determining whether ENBREL® improved symptoms of rheumatoid arthritis; results indicating that it did improve symptoms were published in 1996. Immunex conducted Phase III testing and invested a substantial amount of time and resources testing ENBREL® to demonstrate that it was safe and effective for certain disorders. Immunex invested considerable time and resources, and took considerable risk, in conducting these tests and obtaining their results.

ANSWER: Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 26, and therefore denies the same.

27. Based on the results of clinical testing in rheumatoid arthritis, Immunex filed Biologic License Application ("BLA") No. 103795. As a result, in November 1998, the FDA first approved ENBREL®, pursuant to BLA No. 103795, for treating moderate to severe rheumatoid arthritis. Immunex holds the rights to BLA No. 103795.

ANSWER: On information and belief, Samsung Bioepis admits that the FDA approved ENBREL® in 1998 for the treatment of moderate to severely active rheumatoid arthritis under BLA No. 103795. Samsung Bioepis is without sufficient knowledge or information to admit or deny the remaining allegations of paragraph 27, and therefore denies the same.

28. Immunex's further clinical testing revealed that ENBREL® was safe and effective to treat certain additional conditions. Based on Immunex's further clinical testing, Immunex filed supplements to BLA No. 103795, requesting that the FDA approve ENBREL® for certain additional indications. As a result, the FDA approved ENBREL® for treating polyarticular juvenile idiopathic arthritis in 1999, psoriatic arthritis in 2002, ankylosing spondylitis in 2003, and plaque psoriasis in 2004. These approvals are the direct result of Immunex's very significant investments in the development and clinical trials of ENBREL®.

ANSWER: On information and belief, Samsung Bioepis admits that the FDA approved ENBREL® in 1998 for the treatment of moderate to severely active rheumatoid arthritis under BLA No. 103795. Samsung Bioepis also admits ENBREL® is FDA approved for the treatment of polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis. Samsung Bioepis is without sufficient knowledge or information to admit or deny the remaining allegations of paragraph 28, and therefore denies the same.

C. Bioepis's Knowledge of the Patents-In-Suit, Its Etanercept Biosimilar, and Its Abbreviated BLA

29. As alleged herein, Immunex's '225 Patent had issued by the time that Samsung Bioepis was formed in 2012. Immunex's '605 Patent issued in February 2012, and the '631 Patent in May 2014. Roche's '182 Patent had issued the year before Bioepis's formation, in 2011, and Roche's '522 Patent issued in April 2012. In the context of the relevant circumstances here, Bioepis was either aware of each of these patents or was willfully blind to their existence.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits that according to the Patents-in-Suit, the '225 patent issued in March 2011, the '605 patent issued in February 2012, the '631 patent issued in May 2014, the '182 patent issued in November 2011, and the '522 patent issued in April 2012. Samsung Bioepis admits that it was formed in 2012. The phrase "[i]n the context of the relevant circumstances here" is vague and ambiguous, and Samsung Bioepis thus denies the remaining allegations of paragraph 29.

30. According to its website, Bioepis is part of the Samsung Group. Bioepis's website states that its first six targets for biosimilar drugs were "worth up to 52.9 billion USD in the global market, with an average growth rate of 21% per year. The size is estimated to mark 22.9 billion USD by 2020." Given the size of that market, it is reasonable to infer that before and while undertaking to develop a biosimilar, Bioepis would determine whether and what patents protected the innovative drug Bioepis sought to target. Consistent with that inference, Bioepis's website advises that Bioepis was aware that the manufacture, use, offer for sale, sale, or importation of its biosimilars might be prohibited by patents: "Biosimilars can be manufactured when the original product's patent expires." http://www.samsungbioepis.com/en/newsroom/detail/Samsung-Bio-Business-Possible-Recreation-of-the-Semiconductor-Legend.html.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 30 that quote from or refer to the content in the referenced hyperlink at least because the above referenced hyperlink is invalid, and for at least that reason Samsung Bioepis denies the same. Samsung Bioepis is without sufficient knowledge or information to admit or deny the reasonableness of the inference stated

in paragraph 30 and therefore denies the same. Samsung Bioepis admits that it is aware of the BPCIA. Samsung Bioepis denies the remaining allegations of paragraph 30.

31. Based on the circumstances, it is reasonable to infer that Bioepis was aware, or at least willfully blind to the existence, of each of the five Patents-In-Suit during the development and FDA approval process for Bioepis's etanercept biosimilar product.

ANSWER: Samsung Bioepis admits that it was aware of each of the five Patents-in-Suit at least by the time it submitted Biologics License Application No. 761066 to FDA. Samsung Bioepis is without sufficient knowledge or information to admit or deny the reasonableness of the inference stated in paragraph 31, and therefore denies the same. Samsung Bioepis denies all remaining allegations of paragraph 31.

32. Bioepis is piggybacking on the fruits of Immunex/AML and Roche's trailblazing efforts. Bioepis has developed an etanercept biosimilar that, on information and belief, has the identical primary amino acid sequence as Immunex's ENBREL®.

ANSWER: Samsung Bioepis admits it has developed an etanercept biosimilar product that has the identical primary amino acid sequence as in ENBREL®. Samsung Bioepis denies the remaining allegations of paragraph 32.

33. On information and belief, Bioepis previously submitted aBLA 761066 referencing Immunex's ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use or sale of Bioepis's etanercept biosimilar product before the expiration of the Patents-In-Suit.

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar product. Samsung Bioepis further admits that BLA No. 761066 references Enbrel®. Samsung Bioepis denies the remaining allegations of paragraph 33.

34. According to the FDA-approved label, Bioepis's etanercept biosimilar product, etanercept-ykro, like Immunex's ENBREL®, "is a dimeric fusion protein consisting of the extracellular ligand-binding portion of the human 75 kilodalton (p75) tumor necrosis factor receptor (TNFR) linked to the Fc portion of human IgG1. The Fc component of etanercept-ykro contains the CH2 domain, the CH3 domain and hinge region, but not the CH1 domain of IgG1. Etanercept-ykro is produced by recombinant DNA technology in a Chinese hamster ovary

(CHO) mammalian cell expression system." On information and belief, Bioepis's etanercept biosimilar specifically binds human TNF.

ANSWER: Samsung Bioepis admits the FDA-approved label for its biosimilar product etanercept-ykro states:

> Etanercept-ykro, a tumor necrosis factor (TNF) blocker, is a dimeric fusion protein consisting of the extracellular ligand-binding portion of the human 75 kilodalton (p75) tumor necrosis factor receptor (TNFR) linked to the Fc portion of human IgG1. The Fc component of etanercept-ykro contains the C_H2 domain, the C_H3 domain and hinge region, but not the C_H1 domain of IgG1. Etanercept-ykro is produced by recombinant DNA technology in a Chinese hamster ovary (CHO) mammalian cell expression system.

Samsung Bioepis admits etanercept-ykro specifically binds human TNF. Samsung Bioepis denies the remaining allegations of paragraph 34.

35. On information and belief, in seeking FDA approval for its etanercept biosimilar product, Bioepis extensively and explicitly relied on the clinical trials data that Immunex had invested in and developed when applying for and securing FDA approval for ENBREL®.

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar product. Samsung Bioepis denies the remaining allegations of paragraph 35.

36. On information and belief, Bioepis copied the FDA-approved label for Immunex's ENBREL® in seeking and receiving approval for its etanercept biosimilar product. Bioepis's etanercept biosimilar product, like Immunex's ENBREL®, has been approved for five indications: treating rheumatoid arthritis, polyarticular juvenile idiopathic arthritis, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis. In addition, the route of administration of Bioepis's etanercept biosimilar is the same as that of Immunex's ENBREL®, and the approved dosage form and strength of Bioepis's etanercept biosimilar represents a subset of the approved forms and strengths of Immunex's ENBREL®.

ANSWER: Samsung Bioepis admits that its etanercept biosimilar product has been approved for five indications, as further described in its FDA-approved label: rheumatoid arthritis, polyarticular juvenile idiopathic arthritis in patients aged 2 years or older, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis in patients 4 years or older. Samsung Bioepis admits the route of administration of Bioepis's etanercept biosimilar product is the same

as that of Immunex's ENBREL®. The approved dosage form and strength of Bioepis's etanercept biosimilar product is 25 mg/0.5 mL and 50 mg/mL solution in a single-dose prefilled syringe. Samsung Bioepis denies the remaining allegations of paragraph 36.

37. On information and belief, Bioepis knows and intends that the FDA-approved label for its biosimilar etanercept product will encourage, recommend, or promote uses of its product for the indications for which it was approved and according to the treatment directions that the label sets forth—regimens that infringe the Immunex Patents, as alleged herein.

ANSWER: Denied.

D. Bioepis's Failure to Comply with the BPCIA

38. The BPCIA provides that "[w]hen a subsection (k) applicant submits an application under subsection (k), such applicant shall provide to the persons described in clause (ii), subject to the terms of this paragraph, confidential access to the information required to be produced pursuant to paragraph (2) and any other information that the subsection (k) applicant determines, in its sole discretion, to be appropriate (referred to in this subsection as the 'confidential information')." 42 U.S.C. § 262(l)(1)(B).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits 42 U.S.C. § 262(l)(1)(B) states:

> When a subsection (k) applicant submits an application under subsection (k), such applicant shall provide to the persons described in clause (ii), subject to the terms of this paragraph, confidential access to the information required to be produced pursuant to paragraph (2) and any other information that the subsection (k) applicant determines, in its sole discretion, to be appropriate (referred to in this subsection as the "confidential information").

Samsung Bioepis denies the remaining allegations of paragraph 38.

39. The referenced paragraph (2) provides that "[n]ot later than 20 days after the Secretary notifies the subsection (k) applicant that the application has been accepted for review, the subsection (k) applicant—

> (A) shall provide to the reference product sponsor a copy of the application submitted to the Secretary under subsection (k), and such other information that describes the process or processes used to manufacture the biological product that is the subject of such application; and

> (B) may provide to the reference product sponsor additional information requested by or on behalf of the reference product sponsor." 42 U.S.C. § 262(l)(2).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits that 42 U.S.C. § 262(l)(2) states:

> Not later than 20 days after the Secretary notifies the subsection (k) applicant that the application has been accepted for review, the subsection (k) applicant—
>
> (A) shall provide to the reference product sponsor a copy of the application submitted to the Secretary under subsection (k), and such other information that describes the process or processes used to manufacture the biological product that is the subject of such application; and
>
> (B) may provide to the reference product sponsor additional information requested by or on behalf of the reference product sponsor.

42 U.S.C. § 262(l)(2). Samsung Bioepis denies the remaining allegations of paragraph 39.

40. Bioepis has failed to provide to Immunex any of the information specified by 42 U.S.C. § 262(l)(2), including the application and information required under § 262(l)(2)(A). Such failure removed any limits on Plaintiffs' ability to bring an action for a declaration of infringement, validity, or enforceability of any patent that claims Bioepis's biosimilar etanercept or the use thereof. 42 U.S.C. § 262(l)(9)(C); 28 U.S.C. § 2201(b).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. Samsung Bioepis denies the allegations of paragraph 40 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc.*, 137 S. Ct. 1664 (2017). To the extent an answer is required, Samsung Bioepis denies all characterizations of the law, including statutes and pertinent case law, and denies the allegations of paragraph 40.

41. The BPCIA requires that "[t]he subsection (k) applicant shall provide notice to the reference product sponsor not later than 180 days before the date of the first commercial marketing of the biological product licensed under subsection (k)." 42 U.S.C. § 262(l)(8)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits 42 U.S.C. § 262(l)(8)(A) states "[t]he subsection (k) applicant shall provide notice to the reference product sponsor not later than 180 days before the date of the first commercial marketing of the biological product licensed under subsection (k)." Samsung Bioepis denies the remaining allegations of paragraph 41.

42. Bioepis has not yet provided Immunex the notice of commercial marketing that 42 U.S.C. § 262(l)(8)(A) requires. Based on Bioepis's failure to provide Immunex with the application and information required under § 262(l)(2)(A), it is reasonable to infer that Bioepis might not provide notice to Immunex in accordance with § 262(l)(8)(A). Bioepis should be prohibited from beginning commercial marketing of its biosimilar product for at least 180 days from the date Bioepis provides such notice to Immunex.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. Samsung Bioepis denies the allegations of paragraph 42 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc*., 137 S. Ct. 1664 (2017). Samsung Bioepis admits that as of the filing date of Plaintiffs' Complaint, Samsung Bioepis had not provided Immunex with its 180-day Notice of Commercial Marketing for ETICOVO™. To the extent a further answer is required, Samsung Bioepis denies all characterizations of the law, including statutes and pertinent case law, and denies the remaining allegations of paragraph 42.

V. THE PATENTS-IN-SUIT

A. The '182 and '522 Patents

43. In the late 1980s, Roche and Immunex scientists were early pioneers in isolating, characterizing, cloning, and sequencing p55 and p75 versions of the human TNF receptors, respectively.

ANSWER: Samsung Bioepis is without sufficient knowledge or information to admit or deny the allegations in paragraph 43, and therefore denies the same.

44. Roche scientists were the first to publish the human p55 TNF receptor gene's amino acid sequence. *See* Loetscher et al., "Molecular Cloning and Expression of the Human 55 kd Tumor Necrosis Factor Receptor," *Cell*, 61:351-359 (April 20, 1990).

ANSWER: Samsung Bioepis admits there is a publication by Loetscher et al., "Molecular Cloning and Expression of the Human 55 kd Tumor Necrosis Factor Receptor," Cell, 61:351-359 (April 20, 1990). Samsung Bioepis is without sufficient knowledge or information to admit or deny the remaining allegations in paragraph 44, and therefore denies the same.

45. In May 1990, Immunex scientists were the first to publish the p75 TNF receptor gene's amino acid sequence. *See* Smith et al., "A Receptor for Tumor Necrosis Factor Defines an Unusual Family of Cellular and Viral Proteins," *Science* 248:1019-1023 (1989). Shortly thereafter, Roche scientists also published the p75 receptor's amino acid sequence, confirming the results published in Smith. Dembic et al., "Two human TNF receptors have similar extracellular, but distinct intracellular, domain sequences," *Cytokine* 2(4):231-237 (1989).

ANSWER: Samsung Bioepis admits there is a publication by Smith et al., "A Receptor for Tumor Necrosis Factor Defines an Unusual Family of Cellular and Viral Proteins," Science 248:1019-1023 (1989). Samsung Bioepis also admits there is a publication by Dembic et al., "Two human TNF receptors have similar extracellular, but distinct intracellular, domain sequences," Cytokine 2(4):231-237 (1989). Samsung Bioepis is without sufficient knowledge or information to admit or deny any remaining allegations in paragraph 45, and therefore denies the same.

46. On August 31, 1990, Roche scientists filed European Patent Application No. 90116707.2, which disclosed and taught the novel concept of fusing the extracellular fragment of the TNF receptors with a portion of the human immunoglobulin heavy chain (i.e., all of the domains of the constant region of a human immunoglobulin IgG heavy chain other than the first domain of said constant region). These Roche scientists also filed a United States patent application on September 10, 1990, which claimed priority to said European patent application.

ANSWER: Samsung Bioepis admits that EP Application No 90116707.2 states it was filed on August 31, 1990 and names Manfred Brockhaus, Reiner Gentz, Zlatko Dembic, Werner Lesslauer, Hansruedi Lotscher, and Ernst-Jurgen Schlaeger as inventors. Samsung Bioepis further admits that U.S. Patent Application No. 07/580,013 states that it was filed on September

10, 1990, purports to claim priority to EP Application No. 90116707.2, and names Manfred Brockhaus, Reiner Gentz, Zlatko Dembic, Werner Lesslauer, Hansruedi Lotscher, and Ernst-Jurgen Schlaeger as inventors. Samsung Bioepis denies the remaining allegations of Paragraph 46.

47. The Roche Patents both issued from applications that claim priority to the European patent application filed on August 31, 1990.

ANSWER: Samsung Bioepis admits that the faces of the '182 and '522 patents purport to claim priority to EP Application No. 90116707.2. Samsung Bioepis denies the remaining allegations of Paragraph 47.

48. The '182 Patent is directed to a fusion protein incorporating a TNF-binding portion of the p75 TNF receptor and covers etanercept. The '522 Patent is directed to nucleic acids, host cells, and methods of using such nucleic acids and host cells to make the p75 TNF receptor fusion protein. Both Roche Patents could have been identified in Immunex's list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits that the '182 patent is entitled "Human TNF Receptor Fusion Protein" and the patent is generally directed to fusion proteins that specifically bind human TNF comprising or consisting of, inter alia, TNF-binding soluble fragments of an insoluble p75 human TNF receptor or the extracellular region of the insoluble p75 human TNF receptor. Samsung Bioepis further admits that the '522 patent is entitled, "Human TNF Receptor," and the patent is generally directed to polynucleotides, host cells, and methods of making polynucleotides encoding proteins that consist of, inter alia, the extracellular region of an insoluble p75 human TNF receptor. Samsung Bioepis denies that the '182 or '522 patents describe either a p75 TNF receptor, a fusion protein comprising or consisting of a p75 TNF receptor or fragments or portions thereof, or any method of making such a fusion protein. Samsung Bioepis denies that the named

inventors on the ‘182 and ‘522 patents invented or possessed a fusion protein that comprises or consists of the p75 TNF receptor or fragments or portions thereof. This paragraph also contains legal contentions, legal argument, and legal conclusions to which no answer is required. Samsung Bioepis denies any remaining allegations of paragraph 48 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc*., 137 S. Ct. 1664 (2017).

B. The ‘225, ‘605, and ‘631 Patents

49. In developing etanercept as a therapeutic, Immunex also developed regimens for, and obtained patents directed towards, using etanercept to treat psoriasis and/or psoriatic arthritis. The ’225 Patent, the ’605 Patent, and the ’631 Patent (“the Immunex Patents”), owned by Immunex, disclose and claim methods of using etanercept to treat psoriasis and/or psoriatic arthritis.

ANSWER: Samsung Bioepis admits the ’225, ’605, and ’631 patents identify Immunex as the assignee of these patents. Samsung Bioepis admits that the ‘225, ‘605, and ‘631 patents are generally directed to the treatment of one or more of the following conditions: psoriasis, ordinary psoriasis, plaque psoriasis, and/or psoriatic arthritis. Samsung Bioepis denies the remaining allegations of Paragraph 49.

50. The Immunex Patents claim priority to a provisional application filed on August 11, 1999. The Immunex Patents also claim priority to non-provisional applications filed August 13, 1999, and June 23, 2000.

ANSWER: Samsung Bioepis admits that the ‘225, ‘605, and ‘631 patents purport to claim priority to Provisional Application No. 60/148,234, filed August 11, 1999, and U.S. Application Nos. 09/373,828, filed on August 13, 1999, and 09/602,351, filed on June 23, 2000. Samsung Bioepis denies the remaining allegations of Paragraph 50.

51. As a general matter, the Immunex Patents contain claims to using etanercept to treat psoriasis and/or psoriatic arthritis, and further specify certain dosage regimens to follow.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung

Bioepis admits that the '225, '605, and '631 patents are generally directed to using etanercept to treat one or more of the following conditions: psoriasis, plaque psoriasis, and/or psoriatic arthritis and that some of the claims of those patents claim dosing regimens. Samsung Bioepis denies the remaining allegations of Paragraph 51.

52. The manner in which etanercept is used—according to the labels for both ENBREL® and Bioepis's etanercept biosimilar product—to treat psoriasis (or psoriasis and/or psoriatic arthritis) today falls within the scope of the claims of the Immunex Patents. Each of the Immunex Patents could have been identified in Immunex's list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis denies the allegations of paragraph 52, including that Samsung Bioepis's etanercept biosimilar product is currently being used in the United States, and that the claims of the '225, '605, and/or '631 patents claim only the treatment of "psoriasis (or psoriasis and/or psoriatic arthritis)." Samsung Bioepis further denies any remaining allegations of paragraph 52 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc*., 137 S. Ct. 1664 (2017).

COUNT 1: FAILURE TO SUPPLY NOTICE OF COMMERCIAL MARKETING UNDER 42 U.S.C. § 262(*l*)(8)(A)

53. Paragraphs 1-42 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-42 as if fully set forth herein.

54. The BPCIA provides that "[t]he subsection (k) applicant shall provide notice to the reference product sponsor not later than 180 days before the date of the first commercial marketing of the biological product licensed under subsection (k)." 42 U.S.C. § 262(*l*)(8)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits 42 U.S.C. § 262(l)(8)(A) states, "[t]he subsection (k) applicant shall provide

notice to the reference product sponsor not later than 180 days before the date of the first commercial marketing of the biological product licensed under subsection (k)." Samsung Bioepis denies the remaining allegations of paragraph 54.

55. Bioepis has not provided notice to Immunex pursuant to 42 U.S.C. § 262(l)(8)(A); by its terms, that subsection operates to bar Bioepis from commercial marketing pending, at a minimum, such notice, followed by 180 days.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent an answer is required, Samsung Bioepis admits 42 U.S.C. § 262(l)(8)(A) states, "[t]he subsection (k) applicant shall provide notice to the reference product sponsor not later than 180 days before the date of the first commercial marketing of the biological product licensed under subsection (k)." Samsung Bioepis admits that as of the filing date of Plaintiffs' Complaint, Samsung Bioepis had not provided Immunex with its 180-day Notice of Commercial Marketing for ETICOVO™. Samsung Bioepis denies the remaining allegations of paragraph 55.

56. On information and belief, Bioepis is prepared imminently to begin to use, offer, for sale, and sell in the United States, and import into the United States, its etanercept biosimilar product.

ANSWER: The term "imminently" as used in paragraph 56 is vague and ambiguous. Therefore, for at least this reason, Samsung Bioepis is without sufficient information to admit or deny the allegations in paragraph 56 and therefore denies them.

57. Immunex/AML and Roche are entitled to injunctive relief preventing Bioepis from commercial marketing consistent with the notice period provided by that statute.

ANSWER: Denied.

COUNT 2: INFRINGEMENT OF THE '182 PATENT UNDER 35 U.S.C. § 271(e)(2)(C)(ii)

58. Paragraphs 1-48 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-48 as if fully set forth herein.

59. The United States Patent and Trademark Office ("USPTO") duly and legally issued the '182 Patent, titled "Human TNF Receptor Fusion Protein," on November 22, 2011. A true and correct copy of the '182 Patent is attached to this Complaint as Exhibit 1.

ANSWER: Samsung Bioepis admits that the USPTO issued the '182 patent on November 22, 2011. Samsung Bioepis admits that the '182 Patent is titled, "Human TNF Receptor Fusion Protein." Samsung Bioepis admits that Exhibit 1 to the Complaint purports to be a copy of the '182 patent. Samsung Bioepis denies that the '182 patent was duly and legally issued. Samsung Bioepis denies the remaining allegations of Paragraph 59.

60. Claims of the '182 Patent cover etanercept and pharmaceutical compositions that are made from etanercept. Thus, the '182 Patent could have been identified in Immunex's list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis denies the allegations of paragraph 60 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc*., 137 S. Ct. 1664 (2017). Samsung Bioepis denies the remaining allegations of paragraph 60.

61. On information and belief, Bioepis infringed claims of the '182 Patent by submitting an aBLA referencing Immunex's ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '182 Patent.

ANSWER: Denied.

62. On information and belief, Bioepis has known of the '182 Patent since Bioepis was founded or has been willfully blind to its existence and contents since then. Despite such knowledge, Bioepis nonetheless filed its aBLA with the FDA, seeking approval from the FDA to engage in the commercial manufacture, use or sale of Bioepis's etanercept biosimilar product before the expiration of the '182 Patent and in violation of Immunex/AML and Roche's patent rights.

ANSWER: Samsung Bioepis admits that it had knowledge of the existence of the '182 patent at least by the time it submitted Biologics License Application No. 761066 to FDA. Samsung Bioepis denies the remaining allegations of paragraph 62.

63. Immunex/AML and Roche are entitled to a judgment that Bioepis has infringed one or more claims of the '182 Patent by submitting an aBLA referencing Immunex's ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '182 Patent.

ANSWER: Denied.

64. Immunex/AML and/or Roche would be irreparably harmed if Bioepis is not enjoined from the commercial manufacture, use, offer for sale, or sale within the United States, or importation into the United States of Bioepis's FDA approved etanercept biosimilar product. Immunex/AML and Roche do not have an adequate remedy at law and are entitled to injunctive relief preventing Bioepis from such infringement of one or more claims of the `182 Patent.

ANSWER: Denied.

COUNT 3: DECLARATORY JUDGMENT OF INFRINGEMENT OF THE '182 PATENT UNDER 35 U.S.C. § 271(a)

65. Paragraphs 1-48 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-48 as if fully set forth herein.

66. On information and belief, Bioepis has sought and obtained FDA approval of Bioepis's biosimilar etanercept product under 42 U.S.C. § 262(k) by reference to Immunex's ENBREL®, and now holds the biological license granted by FDA for Bioepis's biosimilar etanercept product.

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar product, and that Samsung Bioepis's Biologics License Application meets the requirements of 42 U.S.C. § 262(k)(2)(A)(i). Samsung Bioepis admits the FDA approved Samsung Bioepis's Biologics License Application No. 761066 on April 25, 2019. Samsung Bioepis denies the remaining allegations of paragraph 66.

67. On information and belief, Bioepis intends to and will immediately begin to use, offer for sale, or sell within the United States, or import into the United States, Bioepis's etanercept biosimilar product, which would constitute infringement of one or more claims of the '182 Patent under 35 U.S.C. § 271(a).

ANSWER: Denied.

68. An actual controversy has arisen and now exists between the parties concerning whether Bioepis's using, offering to sell, or selling within the United States, or importing into the United States, its etanercept biosimilar product has infringed and/or will infringe one or more claims of the '182 Patent.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis does not contest that Plaintiffs' infringement claims should be adjudicated in this action. Samsung Bioepis denies the remaining allegations of paragraph 68.

69. Immunex/AML and Roche are entitled to a declaratory judgment that Bioepis has infringed and/or would infringe one or more claims of the '182 Patent by making, using, offering to sell, or selling within the United States, or importing into the United States, Bioepis's etanercept biosimilar product before the expiration of the '182 Patent.

ANSWER: Denied.

70. Immunex/AML and/or Roche would be irreparably harmed if Bioepis is not enjoined from infringing one or more claims of the '182 Patent. Immunex/AML and Roche do not have an adequate remedy at law and are entitled to injunctive relief prohibiting Bioepis from making, using, offering to sell, or selling within the United States, or importing into the United States, Bioepis's etanercept biosimilar product before the expiration of the '182 Patent.

ANSWER: Denied.

COUNT 4: INFRINGEMENT OF THE '522 PATENT UNDER 35 U.S.C. § 271(e)(2)(C)(ii)

71. Paragraphs 1-48 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-48 as if fully set forth herein.

72. The USPTO duly and legally issued the '522 Patent, titled "Human TNF Receptor," on April 24, 2012. A true and correct copy of the '522 Patent is attached to this Complaint as Exhibit 2.

ANSWER: Samsung Bioepis admits that the USPTO issued the '522 patent on April 24, 2012. Samsung Bioepis admits that Exhibit 2 to the Complaint purports to be a copy of the '522 patent. Samsung Bioepis admits the '522 Patent is entitled, "Human TNF Receptor." Samsung Bioepis denies that the '522 patent was duly and legally issued. Samsung Bioepis denies the remaining allegations of paragraph 72.

73. Claims of the '522 Patent cover, among other things, methods of making etanercept and certain materials used in such methods. Thus, the '522 Patent could have been identified in Immunex's list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis denies the allegations of paragraph 73 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc.*, 137 S. Ct. 1664 (2017). Samsung Bioepis denies the remaining allegations of paragraph 73.

74. On information and belief, Bioepis infringed claims of the '522 Patent by submitting an aBLA referencing Immunex's ENBREL®, seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '522 Patent.

ANSWER: Denied.

75. On information and belief, Bioepis has known of the '522 Patent since its issuance or has been willfully blind to its existence and contents since then. Despite such knowledge, Bioepis nonetheless filed its aBLA with the FDA, seeking approval from the FDA to engage in the commercial manufacture, use or sale of Bioepis's etanercept biosimilar product, before the expiration of the '522 Patent and in violation of Immunex/AML and Roche's patent rights.

ANSWER: Samsung Bioepis admits that it had knowledge of the existence of the '522 patent at least by the time it submitted Biologics License Application No. 761066 to FDA. Samsung Bioepis denies the remaining allegations of paragraph 75.

76. Immunex/AML and Roche are entitled to a judgment that Bioepis has infringed one or more claims of the '522 Patent by submitting an aBLA referencing Immunex's ENBREL®

and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '522 Patent.

ANSWER: Denied.

77. Immunex/AML and/or Roche would be irreparably harmed if Bioepis is not enjoined from the commercial manufacture, use, offer for sale, or sale within the United States, or importation into the United States of Bioepis's FDA approved etanercept biosimilar product. Immunex/AML and Roche do not have an adequate remedy at law and are entitled to injunctive relief preventing Bioepis from such infringement of one or more claims of the '522 Patent.

ANSWER: Denied.

COUNT 5: DECLARATORY JUDGMENT OF INFRINGEMENT OF THE '522 PATENT UNDER 35 U.S.C. § 271(g)

78. Paragraphs 1-48 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-48 as if fully set forth herein.

79. On information and belief, Bioepis intends to and will immediately begin to import into the United States, and offer to sell, sell, and use within the United States, Bioepis's etanercept biosimilar product, which would constitute infringement of one or more claims of the '522 Patent under 35 U.S.C. § 271(g) because Bioepis's etanercept biosimilar product is made by the claimed process.

ANSWER: Denied.

80. The etanercept made by Bioepis's process that infringes the '522 Patent is the essential active ingredient of Bioepis's etanercept biosimilar product. On information and belief, there is no subsequent process that materially changes that active ingredient, including during any fill and finish of the biosimilar product.

ANSWER: Denied.

81. An actual controversy has arisen and now exists between the parties concerning whether Bioepis's importing into the United States, or offering to sell, selling, or using within the United States (irrespective of where manufacturing occurred), its etanercept biosimilar product, before the expiration of the '522 Patent, has infringed and/or will infringe one or more claims of the '522 Patent.

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung

Bioepis does not contest that Plaintiffs' infringement claims should be adjudicated in this action. Samsung Bioepis denies the remaining allegations of paragraph 81.

82. Immunex/AML and Roche are entitled to a declaratory judgment that Bioepis has infringed and/or will infringe one or more claims of the '522 Patent by making, using, offering to sell, or selling within the United States, or importing into the United States, Bioepis's etanercept biosimilar product before the expiration of the '522 Patent.

ANSWER: Denied.

83. Immunex/AML and/or Roche will be irreparably harmed if Bioepis is not enjoined from infringing one or more claims of the '522 Patent. Immunex/AML and Roche do not have an adequate remedy at law and are entitled to injunctive relief preventing Bioepis from making, using, offering to sell, or selling within the United States, or importing into the United States, Bioepis's etanercept biosimilar product before the expiration of the '522 Patent.

ANSWER: Denied.

COUNT 6: INFRINGEMENT OF THE '225 PATENT UNDER 35 U.S.C. § 271(e)(2)(C)(ii)

84. Paragraphs 1-52 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-52 as if fully set forth herein.

85. The USPTO duly and legally issued the '225 Patent, titled "Soluble Tumor Necrosis Factor Receptor Treatment of Medical Disorders," on March 29, 2011. A true and correct copy of the '225 Patent is attached to this Complaint as Exhibit 3.

ANSWER: Samsung Bioepis admits that the USPTO issued the '225 patent on March 29, 2011. Samsung Bioepis admits that Exhibit 3 to the Complaint purports to be a copy of the '225 patent. Samsung Bioepis admits that the '225 patent is titled, "Soluble Tumor Necrosis Factor Receptor Treatment of Medical Disorders." Samsung Bioepis denies that the '225 patent was duly and legally issued. Samsung Bioepis denies the remaining allegations of paragraph 85.

86. The '225 Patent is generally directed to methods of treating psoriasis and/or psoriatic arthritis by administering etanercept. Thus, the '225 Patent could have been identified in Immunex's list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis denies the allegations of paragraph 86 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc*., 137 S. Ct. 1664 (2017). Samsung Bioepis denies the remaining allegations of paragraph 86.

87. On information and belief, Bioepis has infringed the '225 Patent by submitting an aBLA referencing Immunex's ENBREL®, seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '225 Patent.

ANSWER: Denied.

88. On information and belief, Bioepis has known of the '225 Patent since Bioepis was founded or was at least willfully blind to its existence and contents. Despite such knowledge or willful blindness, Bioepis nonetheless filed its aBLA with the FDA, seeking approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '225 Patent and in violation of Immunex/AML's patent rights. On information and belief, Bioepis copied ENBREL®'s labeling, which instructs physicians and patients to administer etanercept subcutaneously for treating psoriasis and/or psoriatic arthritis in specific dosages, which is covered by the '225 Patent.

ANSWER: Samsung Bioepis admits that it was aware of the existence of the '225 patent at least by the time it submitted Biologics License Application No. 761066 to FDA. Samsung Bioepis denies the remaining allegations of paragraph 88.

89. Immunex/AML are entitled to a judgment that Bioepis has infringed one or more claims of the '225 Patent by submitting an aBLA referencing Immunex's ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '225 Patent.

ANSWER: Denied.

90. Immunex/AML would be irreparably harmed if Bioepis is not enjoined from the commercial manufacture, use, offer for sale, or sale within the United States, or importation into the United States of Bioepis's FDA approved etanercept biosimilar product. Immunex/AML do not have an adequate remedy at law and are entitled to injunctive relief preventing Bioepis from such infringement of one or more claims of the '225 Patent.

ANSWER: Denied.

COUNT 7: DECLARATORY JUDGMENT OF INFRINGEMENT OF THE '225 PATENT UNDER 35 U.S.C. § 271(b)

91. Paragraphs 1-52 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-52 as if fully set forth herein.

92. On information and belief, Bioepis sought and has received FDA approval for Bioepis's etanercept biosimilar product under 42 U.S.C. § 262(k) for treating psoriasis and/or psoriatic arthritis.

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar product, and that Samsung Bioepis's BLA meets the requirements of 42 U.S.C. § 262(k)(2)(A)(i). Samsung Bioepis admits the FDA approved Samsung Bioepis's Biologics License Application No. 761066 on April 25, 2019. Samsung Bioepis admits that its approved label contains indications for the use of its product to treat rheumatoid arthritis, polyarticular juvenile idiopathic arthritis in patients aged 2 years or older, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis in patients 4 years or older. Samsung Bioepis denies that it received FDA approval "for treating psoriasis" and that either its approved label or ENBREL®'s label instructs physicians and patients to administer etanercept "for treating psoriasis." Samsung Bioepis denies the remaining allegations of Paragraph 92.

93. If a doctor were to administer to a patient, or a patient were to self-administer, Bioepis's etanercept biosimilar product for treating psoriasis and/or psoriatic arthritis pursuant to regimens, *i.e.*, methods, specified on the FDA-approved label for that product, performing such methods would directly infringe one or more claims of the '225 Patent.

ANSWER: Denied.

94. As alleged herein, Bioepis took actions that it intended to cause doctors to administer to patients, or patients to self-administer, Bioepis's etanercept biosimilar product pursuant to those methods. Those actions included seeking FDA approval for a label that specified treatment methods that, if followed as expected, would infringe the '225 patent. On information and belief, Bioepis intends to advertise and otherwise inform doctors and patients

that its etanercept biosimilar product is available to treat psoriasis and/or psoriatic arthritis using those claimed treatment methods.

ANSWER: Denied.

95. As alleged herein, Bioepis was aware of the ’225 Patent and knew that, if its etanercept biosimilar product were administered as specified in the FDA label for treating psoriasis and/or psoriatic arthritis, such administration would constitute infringement of the ’225 patent.

ANSWER: Denied.

96. Immunex/AML are entitled to a declaratory judgment that, by offering to sell, or selling within the United States, before the expiration of the ’225 Patent, Bioepis’s etanercept biosimilar product, the label for which instructs doctors and patients to follow regimens claimed in the ’225 Patent for treating psoriasis and/or psoriatic arthritis, Bioepis would induce infringement of the ’225 Patent.

ANSWER: Denied.

97. Immunex/AML do not have an adequate remedy at law and are entitled to injunctive relief prohibiting Bioepis from using, inducing others to use, offering to sell, or selling within the United States Bioepis’s etanercept biosimilar product for treating psoriasis and/or psoriatic arthritis before the expiration of the ’225 Patent.

ANSWER: Denied.

COUNT 8: INFRINGEMENT OF THE ‘605 PATENT UNDER 35 U.S.C. § 271(e)(2)(C)(ii)

98. Paragraphs 1-52 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-52 as if fully set forth herein.

99. The USPTO duly and legally issued the ’605 Patent, titled “Soluble Tumor Necrosis Factor Receptor Treatment of Medical Disorders,” on February 21, 2012. A true and correct copy of the ’605 Patent is attached to this Complaint as Exhibit 4.

ANSWER: Samsung Bioepis admits that the USPTO issued the ‘605 patent on February 21, 2012. Samsung Bioepis admits the ’605 patent is titled, “Soluble Tumor Necrosis Factor Receptor Treatment of Medical Disorders.” Samsung Bioepis admits that Exhibit 4 to the

Complaint purports to be a copy of the '605 patent. Samsung Bioepis denies that the '605 patent was duly and legally issued. Samsung Bioepis denies the remaining allegations of Paragraph 99.

100. The '605 Patent is generally directed to methods of treating psoriasis by administering etanercept. Thus, the '605 Patent could have been identified in Immunex's list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis denies the allegations of paragraph 100 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc.*, 137 S. Ct. 1664 (2017). Samsung Bioepis denies the remaining allegations of paragraph 100.

101. On information and belief, Bioepis has infringed the '605 Patent by submitting an aBLA referencing Immunex's ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '605 Patent.

ANSWER: Denied.

102. On information and belief, Bioepis has known of the '605 Patent since the patent's issuance or was at least willfully blind to its existence and contents. Despite such knowledge or willful blindness, Bioepis nonetheless filed its aBLA with the FDA, seeking approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '605 Patent and in violation of Immunex/AML's patent rights. On information and belief, Bioepis copied ENBREL®'s labeling that instructs physicians and patients to administer etanercept for treating psoriasis in specific dosages, which is covered by the '605 Patent.

ANSWER: Samsung Bioepis admits that it was aware of the existence of the '605 patent at least by the time it submitted Biologics License Application No. 761066 to FDA. Samsung Bioepis denies the remaining allegations of paragraph 102.

103. Immunex/AML are entitled to a judgment that Bioepis has infringed one or more claims of the '605 Patent by submitting an aBLA referencing Immunex's ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis's etanercept biosimilar product before the expiration of the '605 Patent.

ANSWER: Denied.

104. Immunex/AML would be irreparably harmed if Bioepis is not enjoined from the commercial manufacture, use, offer for sale, or sale within the United States, or importation into the United States of Bioepis's FDA approved etanercept biosimilar product. Immunex/AML do not have an adequate remedy at law and are entitled to injunctive relief preventing Bioepis from such infringement of one or more claims of the '605 Patent.

ANSWER: Denied.

COUNT 9: DECLARATORY JUDGMENT OF INFRINGEMENT OF THE '605 PATENT UNDER 35 U.S.C. § 271(b)

105. Paragraphs 1-52 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-52 as if fully set forth herein.

106. On information and belief, Bioepis sought and has received FDA approval for Bioepis's etanercept biosimilar product under 42 U.S.C. § 262(k) for treating psoriasis.

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar product, and that Samsung Bioepis's Biologics License Application meets the requirements of 42 U.S.C. § 262(k)(2)(A)(i). Samsung Bioepis admits the FDA approved Samsung Bioepis's Biologics License Application No. 761066 on April 25, 2019. Samsung Bioepis denies that it received approval for the use of etanercept to treat "psoriasis." Samsung Bioepis denies the remaining allegations of paragraph 106.

107. If a doctor were to administer to a patient, or a patient were to self-administer, Bioepis's etanercept biosimilar product for treating psoriasis pursuant to regimens, i.e., methods, specified on the FDA-approved label for that product, performing such methods would directly infringe one or more claims of the '605 Patent.

ANSWER: Denied.

108. As alleged herein, Bioepis took actions that it intended to cause doctors to administer to patients, or patients to self-administer, Bioepis's etanercept biosimilar product pursuant to those methods. Those actions included seeking FDA approval for a label that specified treatment methods that, if followed as expected, would infringe the '605 patent. On information and belief, Bioepis intends to advertise and otherwise inform doctors and patients

that its etanercept biosimilar product is available to treat psoriasis using those claimed treatment methods.

ANSWER: Denied.

109. As alleged herein, Bioepis was aware of the ’605 Patent and knew that, if its etanercept biosimilar product were administered as specified in the FDA label for treating psoriasis, such administration would constitute infringement of the ’605 patent.

ANSWER: Denied.

110. Immunex/AML are entitled to a declaratory judgment that, by offering to sell, or selling within the United States, before the expiration of the ’605 Patent, Bioepis’s etanercept biosimilar product, the label for which instructs doctors and patients to follow regimens claimed in the ’605 Patent for treating psoriasis, Bioepis would induce infringement of the ’605 Patent.

ANSWER: Denied.

111. Immunex/AML do not have an adequate remedy at law and are entitled to injunctive relief prohibiting Bioepis from using, inducing others to use, offering to sell, or selling within the United States Bioepis’s etanercept biosimilar product for treating psoriasis before the expiration of the ’605 Patent.

ANSWER: Denied.

COUNT 10: INFRINGEMENT OF THE ‘631 PATENT UNDER 35 U.S.C. § 271(e)(2)(C)(ii)

112. Paragraphs 1-52 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-52 as if fully set forth herein.

113. The USPTO duly and legally issued the ’631 Patent, titled “Soluble Tumor Necrosis Factor Receptor Treatment of Medical Disorders,” on May 13, 2014. A true and correct copy of the ’631 Patent is attached to this Complaint as Exhibit 5.

ANSWER: Samsung Bioepis admits that the USPTO issued the ‘631 patent on May 13, 2014. Samsung Bioepis admits that Exhibit 5 to the Complaint purports to be a copy of the ‘631 patent. Samsung Bioepis admits that the ’631 patent is titled, “Soluble Tumor Necrosis Factor Receptor Treatment of Medical Disorders.” Samsung Bioepis denies that the ‘631 patent was duly and legally issued. Samsung Bioepis denies the remaining allegations of paragraph 113.

114. The ’631 Patent is generally directed to methods of treating psoriasis and/or psoriatic arthritis by administering etanercept subcutaneously in specific dosages. Thus, the ’631 Patent could have been identified in Immunex’s list pursuant to 42 U.S.C. § 262(*l*)(3)(A) had Bioepis complied with § 262(*l*)(2)(A).

ANSWER: This paragraph contains legal contentions, legal argument, and legal conclusions to which no answer is required. To the extent a response is required, Samsung Bioepis denies the allegations of paragraph 114 as a misstatement of applicable law. *See Sandoz Inc. v. Amgen Inc*., 137 S. Ct. 1664 (2017). Samsung Bioepis denies the remaining allegations of paragraph 114.

115. On information and belief, Bioepis has infringed the ’631 Patent by submitting an aBLA referencing Immunex’s ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis’s etanercept biosimilar product before the expiration of the ’631 Patent.

ANSWER: Denied.

116. On information and belief, Bioepis has known of the ’631 Patent since the patent’s issuance or was at least willfully blind to its existence and contents. Despite such knowledge or willful blindness, Bioepis nonetheless filed its aBLA with the FDA, seeking approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis’s etanercept biosimilar product, before the expiration of the ’631 Patent and in violation of Immunex/AML’s patent rights. On information and belief, Bioepis copied ENBREL®’s labeling, which instructs physicians and patients to administer etanercept subcutaneously for treatment of psoriasis and/or psoriatic arthritis in specific dosages, which is covered by the ’631 Patent.

ANSWER: Samsung Bioepis admits that it was aware of the existence of the ’631 patent at least by the time it submitted Biologics License Application No. 761066 to FDA. Samsung Bioepis denies the remaining allegations of paragraph 116.

117. Immunex/AML are entitled to a judgment that Bioepis has infringed one or more claims of the ’631 Patent by submitting an aBLA referencing Immunex’s ENBREL® and seeking FDA approval under 42 U.S.C. § 262(k) to engage in the commercial manufacture, use, or sale of Bioepis’s etanercept biosimilar product before the expiration of the ’631 Patent.

ANSWER: Denied.

118. Immunex/AML would be irreparably harmed if Bioepis is not enjoined from the commercial manufacture, use, offer for sale, or sale within the United States, or importation into

the United States of Bioepis's FDA approved etanercept biosimilar product. Immunex/AML do not have an adequate remedy at law and are entitled to injunctive relief preventing Bioepis from such infringement of one or more claims of the '631 Patent.

ANSWER: Denied.

COUNT 11: DECLARATORY JUDGMENT OF INFRINGEMENT OF THE '631 PATENT UNDER 35 U.S.C. § 271(b)

119. Paragraphs 1-52 are incorporated by reference as if fully set forth herein.

ANSWER: Samsung Bioepis incorporates its responses to paragraphs 1-52 as if fully set forth herein.

120. On information and belief, Bioepis sought and has received FDA approval for Bioepis's etanercept biosimilar product under 42 U.S.C. § 262(k) for treating psoriasis and/or psoriatic arthritis by administering etanercept subcutaneously in specific dosages.

ANSWER: Samsung Bioepis admits that it submitted Biologics License Application No. 761066 pursuant to 42 U.S.C. § 262(k) to obtain FDA approval for its etanercept biosimilar product, and that Samsung Bioepis's Biologics License Application meets the requirements of 42 U.S.C. § 262(k)(2)(A)(i). Samsung Bioepis admits the FDA approved Samsung Bioepis's Biologics License Application No. 761066 on April 25, 2019. Samsung Bioepis admits that its approved label contains indications for the use of its product to treat rheumatoid arthritis, polyarticular juvenile idiopathic arthritis in patients aged 2 years or older, psoriatic arthritis, ankylosing spondylitis, and plaque psoriasis in patients 4 years or older. Samsung Bioepis denies that it received FDA approval "for treating psoriasis" and that either its approved label or ENBREL®'s label instructs physicians and patients to administer etanercept "for treating psoriasis." Samsung Bioepis denies the remaining allegations of Paragraph 120.

121. If a doctor were to administer to a patient, or a patient were to self-administer, Bioepis's etanercept biosimilar product for treating psoriasis and/or psoriatic arthritis pursuant to regimens, *i.e.*, methods, specified on the FDA-approved label for that product, performing such methods would directly infringe one or more claims of the '631 Patent.

ANSWER: Denied.

122. As alleged herein, Bioepis took actions that it intended to cause doctors to administer to patients, or patients to self-administer, Bioepis's etanercept biosimilar product pursuant to those methods. Those actions included seeking FDA approval for a label that specified treatment methods that, if followed as expected, would infringe the '631 patent. On information and belief, Bioepis intends to advertise and otherwise inform doctors and patients that its etanercept biosimilar product is available to treat psoriasis and/or psoriatic arthritis using those claimed treatment methods.

ANSWER: Denied.

123. As alleged herein, Bioepis was aware of the '631 Patent and knew that, if its etanercept biosimilar product were administered as specified in the FDA label for treating psoriasis and/or psoriatic arthritis, such administration would constitute infringement of the '631 patent.

ANSWER: Denied.

124. Immunex/AML are entitled to a declaratory judgment that, by offering to sell, or selling within the United States, before the expiration of the '631 Patent, Bioepis's etanercept biosimilar product, the label for which instructs doctors and patients to follow regimens claimed in the '631 Patent for treating psoriasis and/or psoriatic arthritis, Bioepis would induce infringement of the '631 Patent.

ANSWER: Denied.

125. Immunex/AML do not have an adequate remedy at law and are entitled to injunctive relief prohibiting Bioepis from using, inducing others to use, offering to sell, or selling within the United States Bioepis's etanercept biosimilar product for treating psoriasis and/or psoriatic arthritis before the expiration of the '631 Patent.

ANSWER: Denied.

AFFIRMATIVE DEFENSES

First Defense (Invalidity)

1. One or more claims of the '182, '522, '225, '605, and '631 patents are invalid for failure to satisfy one or more provisions of the patentability requirements specified in 35 U.S.C. § 101 *et seq.*, including, without limitation, §§ 101, 102, 103, and 112, or under other judicially-created bases for invalidation, including, but not limited to, obviousness-type double patenting.

Second Defense
(No Direct Infringement)

2. Samsung Bioepis has not, does not, and will not infringe, either literally or under the doctrine of equivalents, any valid and enforceable claim of the '182, '522, '225, '605, and '631 patents.

Third Defense
(No Indirect Infringement)

3. Samsung Bioepis has not, does not, and will not induce or contribute to the infringement, either literally or under the doctrine of equivalents, of any valid and enforceable claim of the '182, '522, '225, '605, and '631 patents.

Fourth Defense
(No Equitable Relief)

4. Plaintiffs are not entitled to preliminary and/or permanent equitable relief.

Fifth Defense
(No Exceptional Case)

5. Samsung Bioepis's actions in defending this case do not give rise to an exceptional case under 35 U.S.C. § 285.

Sixth Defense
(Unenforceability for Inequitable Conduct—'182 and '522 Patents)

6. Immunex received initial FDA approval for its etanercept product, sold under the trade name ENBREL®, in November 1998.

7. Based on work done to develop etanercept by its employees or people working on its behalf, Immunex applied for and obtained patents, including U.S. Patent Nos. 5,359,760 (the "'760 patent") and 5,605,690 (the "'690 patent").

8. The '760 and '690 patents are generally directed to the p75 TNFR and fusion proteins comprising the p75 TNFR.

9. Immunex marked ENBREL® with the '760 and '690 patents until those patents expired.[1]

10. The '760 and '690 patents expired in 2012 and 2014, respectively.

11. Immunex has historically marketed and sold ENBREL® in the United States.

12. Immunex has also co-promoted ENBREL® with Pfizer and has paid Pfizer a percentage of the annual gross profits on ENBREL® sales in the United States.

13. Annual sales of ENBREL® have long exceeded $1 billion. For example, United States ENBREL® sales for the years ended December 31, 2009, 2008, and 2007 were $3.5 billion, $3.6 billion, and $3.2 billion, respectively. In fiscal year 2018, sales of ENBREL® exceeded $4.8 billion in the United States.

14. Immunex has had and continues to have a strong interest in protecting ENBREL® from competition, including from competing biosimilar products.

15. Immunex has represented that the following patents cover ENBREL® and etanercept biosimilar products, or methods of using ENBREL® and etanercept biosimilar products: U.S. Patent Nos. 8,063,182 ("the '182 patent"); 8,163,522 ("the '522 patent"); 7,915,225; 8,119,605; and 8,722,631.[2]

16. The '182 patent is entitled "Human TNF Receptor Fusion Protein" and issued on November 22, 2011.

17. The '522 patent is entitled "Human TNF Receptor" and issued on April 24, 2012.

18. Roche purports to be the current owner of the '182 and '522 patents.

[1] For the purposes of this pleading, "Immunex" refers to Immunex Corporation and Amgen Inc., either collectively or in the alternative.

[2] U.S. Patent Nos. 7,915,225; 8,119,605; and 8,722,631 expire August 13, 2019.

19. Immunex purports to be the exclusive licensee of all commercial rights in the '182 and '522 patents, including all rights to sell ENBREL®.

20. AML purports to hold an exclusive license and/or sublicense to the '182 and '522 patents.

21. During prosecution of the '182 and '522 patents, Immunex, through its prosecuting attorneys, including Dr. Rin-Laures and Dr. Sintich, knowingly and intentionally filed declarations from Dr. Stewart Lyman containing false statements and upon which – as admitted by Immunex – the Patent Office relied in assessing patentability of the '182 and '522 patents, as further detailed below.

22. The foregoing entity and individuals engaged in this egregious misconduct with the end goals of obtaining additional patent rights associated with ENBREL® and preventing competition with ENBREL®.

23. Immunex has asserted the ill-gotten '182 and '522 patents in two lawsuits in an attempt to protect ENBREL® from competition and to maintain Immunex's market position for ENBREL®, including ENBREL®'s price.

24. On February 26, 2016, Plaintiffs initiated a lawsuit against Sandoz Inc., Sandoz International GmbH, and Sandoz GmbH (collectively, "Sandoz"), alleging that Sandoz had committed an act of infringement under 35 U.S.C § 271(e)(2)(C) by submitting a Biologics License Application to FDA seeking approval to commercially manufacture, use, offer for sale, sell, distribute in, or import into the United States an etanercept biosimilar product prior to

expiration of, among others, the '182 and '522 patents. *See* ECF No. 1, *Immunex Corp., et al. v. Sandoz Inc., et al.*, Civil Action No. 2:16-cv-01118-CCC-MF (D.N.J.).[3]

25. On April 30, 2019, Plaintiffs initiated this lawsuit, alleging that Samsung Bioepis has committed an act of infringement under 35 U.S.C § 271(e)(2)(C) by submitting a Biologics License Application to FDA seeking approval to commercially manufacture, use, offer for sale, sell, distribute in, or import into the United States its etanercept biosimilar product prior to expiration of, among others, the '182 and '522 patents.

26. As detailed below, the '182 and '522 patents are unenforceable due to inequitable conduct committed by: Immunex, at least through its prosecuting attorneys, including Dr. Rin-Laures and Dr. Sintich, and its declarant Dr. Lyman.

Overview of Roche's p55 TNFR Fusion Protein Research & Patents

27. On information and belief, in the late 1980s, Roche scientists cloned and sequenced the human 55 kilodalton protein (p55) TNFR.

28. On information and belief, as of 1990, persons employed by or working on behalf of Roche, including at least the named inventors of the '182 and '522 patents, sought to develop a fusion protein containing part or all of the p55 TNFR for therapeutic use.

29. On August 31, 1990, Roche filed European Patent Application No. 90116707.2, which purports to disclose the concept of fusing fragments of the p55 TNFR to portions of human IgG1 antibody.

[3] Citations to documents filed in *Immunex Corp., et al. v. Sandoz Inc., et al*., Civil Action No. 2:16-cv-01118-CCC-MF (D.N.J.), have not been attached to this pleading solely for efficiency purposes, and are intended to be and are hereby incorporated by reference.

30. On September 10, 1990, Roche filed U.S. Patent Application No. 07/580,013 ("the '013 application"), which purports to claim priority to European Patent Application No. 90116707.2.

31. On July 21, 1993, Roche filed U.S. Patent Application No. 08/095,640 (the "'640 application"), which is a continuation of the '013 application (which in turn purports to claim priority to European Patent Application No. 90116707.2).

32. The '640 application issued as U.S. Patent No. 5,610,279 and is generally directed at fusion proteins of the p55 TNFR and IgG.

33. On May 19, 1995, Roche filed U.S. Patent Application No. 08/444,790 ("the '790 application") and U.S. Patent Application No. 08/444,791 ("the '791 application").

34. Both the '790 and '791 applications purport to claim priority to the '013 application.

35. Both the '790 and '791 applications were filed before the Uruguay Round Agreements Act ("GATT"), Pub. L. No. 103-465, 108 Stat. 4809 (1994) (codified at 35 U.S.C. § 154(a)(2)), went into effect in June 1995.

36. The '182 patent issued from the '790 application and the '522 patent issued from the '791 application.

37. Because the '182 and '522 patents issued from pre-GATT applications, those applications never published.

38. The public could not have known of the '790 and '791 applications until they were allowed by the Patent Office and issued as the '182 and '522 patents in 2011 and 2012, respectively.

39. Because the ’182 and ’522 patents issued from pre-GATT applications, they expire seventeen years after issuance, on November 22, 2028 for the ’182 patent and on April 24, 2029 for the ’522 patent.

40. The issued claims of the ’182 patent are generally directed to TNFR fusion proteins comprising a soluble fragment of p75 TNFR fused to the hinge, CH_2, and CH_3 heavy chain domains of a human IgG antibody, wherein the protein specifically binds human TNF.

41. The issued claims of the ’522 patent are generally directed to polynucleotides encoding and methods for producing TNFR fusion proteins comprising the soluble extracellular domain of p75 TNFR fused to the hinge, CH2, and CH3 heavy chain domains of a human IgG antibody.

42. There is no disclosure in any of the ’013, ’790, or ’791 applications as filed, or in European Patent Application No. 90116707.2, of the complete amino acid sequence of the p75 TNFR or the “extracellular region” of the p75 TNFR, nor is there any working example of any fusion protein containing part or all of the p75 TNFR.

Roche’s Early Prosecution of the ’790 and ’791 Applications and Dealings with Immunex[4]

43. As submitted by preliminary amendment, the claims of the ’790 application were directed to, among other things, TNFR fusion proteins comprising soluble TNF-binding fragments of p55 TNFR. (Ex. 1 at 98-100.) None of the claims in the preliminary amendment referenced p75 TNFR.

44. For nearly ten years prosecuting the ’790 application, Roche pursued claims referencing p55 TNFR but not p75 TNFR. During the time period in which Roche controlled

[4] Samsung Bioepis hereby incorporates by reference the entire file histories for the prosecution of both the ’790 application and ’791 application. Due to the large size of these file histories, only excerpts of the file histories have been submitted as exhibits to this Answer.

prosecution of the '790 patent, Roche made clear it was not pursuing claims directed towards p75 TNFR. For example, in May 19, 1995, Roche stated "[i]n this divisional application, the new claims are directed to a protein of the 55 kD species." (*Id.* at 101.) Similarly, in remarks made on February 28, 1997, Roche stated "applicants are not herein claiming a 75 kD protein." (Ex. 2 at 6.)

45. As submitted by preliminary amendment, the claims of the '791 application were directed to, among other things, polynucleotides encoding TNFR fusion proteins comprising soluble TNF-binding fragments of p55. (Ex. 3.)

46. For nearly five years prosecuting the '791 application, Roche pursued claims directed to polynucleotides encoding soluble TNF-binding fragments of p55 and not p75. Again, Roche made clear that it was not pursuing claims directed towards p75 TNFR. For example, in the Preliminary Amendment made in May 19, 1995, Roche stated:

> In the parent application U.S. Serial No. 08/095,640, the claims were restricted into Group I: claims 44-57, drawn to protein and antibody, Group II: claims 58-82, drawn to DNA, vector, and host, and Group III: claims 83-84, drawn to a method of isolating proteins, and further restricted into species, a 55 kD protein and a 75 kD protein. This divisional application is directed to the DNA, vector, and host of Group III encoding the 55 kD protein, which was subject matter not elected for prosecution in the parent application

(*Id.* at 4.)

47. In 1999, Immunex licensed the pending '790 and '791 patent applications from Roche, with a license effective date sometime in 1998 and before the launch of ENBREL®. Plaintiffs' Proposed Findings of Facts and Conclusions of Law at 70, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 648, Oct. 23, 2018) (D.N.J.).

48. On August 24, 2000, two years after the FDA approved ENBREL®, Roche filed an amendment in the '791 application causing the then-pending claims to be directed to a DNA

sequence which encodes a chimeric protein comprising (i) a first DNA sequence encoding the soluble portion of an insoluble human TNF binding protein having an apparent molecular weight of either 55 kD or 75 kD, joined to (ii) a second DNA sequence encoding all domains of the constant region of the heavy chain of human IgG, other than the first domain. (Ex. 5.)

49. The August 24, 2000 amendment was the first time during prosecution of the '791 application where Roche submitted for examination claims directed to any aspect of the p75 TNFR.

50. On information and belief, in 2002 Roche discontinued development of its clinical candidate lenercept, a p55 TNFR-IgG_1 fusion protein.

Immunex Gains Control of Prosecuting the '790 and '791 Applications and Redirects the Claims to p75 TNFR Fusion Proteins

51. In 2004, Immunex obtained from Roche at least an exclusive, fully paid-up license to the '790 and '791 patent applications by an Accord and Satisfaction Agreement executed on June 7, 2004 by Amgen Inc., which acquired Immunex in 2002.

52. Immunex's goals in entering into Accord and Satisfaction Agreement included obtaining the right to guide prosecution of the '790 and '791 applications and additional patent protection for ENBREL®. Plaintiffs' Post-Trial Brief at 11, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 645, Oct. 23, 2018) (D.N.J.); Plaintiffs' Proposed Findings of Facts and Conclusions of Law at 73, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 648, Oct. 23, 2018) (D.N.J.).

53. On information and belief, the Accord and Satisfaction Agreement gave Immunex the right to control prosecution of the '790 and '791 applications.

54. Roche has admitted that, after entering into the Accord and Satisfaction Agreement, Roche still owed a duty of candor to the Patent Office concerning prosecution of the

’790 and ’791 applications. Plaintiffs’ Post-Trial Brief at 11, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 645, Oct. 23, 2018) (D.N.J.); *see also* Defendants’ Post-Trial Findings of Fact and Conclusions of Law at 69, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 647, Oct. 23, 2018) (D.N.J.).

55. On October 6, 2004, Immunex obtained power of attorney over, and the full authority to prosecute, the ’790 and ’791 applications. *See, e.g.*, Defendants’ Post-Trial Findings of Fact and Conclusions of Law at 59, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 647, Oct. 23, 2018) (D.N.J.), *see also* (Exs. 6, 7.)

56. As of October 6, 2004, Immunex prosecuted the ’790 and ’791 applications and owed a duty of candor to the Patent Office.

57. On December 9, 2004, Immunex filed an amendment in the ’791 application causing the then-pending claims to be directed to a polynucleotide encoding a TNFR fusion protein and comprising two polynucleotide subsequences, wherein (i) the first polynucleotide subsequence encodes a soluble fragment of insoluble TNFR that has a molecular weight of 75 kD, (ii) the second polynucleotide subsequence encodes all of the domains of the constant region of human IgG heavy chain other than the first domain, and (iii) the recombinant protein exhibits specific TNF binding activity. (Ex. 8.)

58. The claims presented in the December 9, 2004 amendment in the ’791 application removed all references to p55 TNFR from the pending claims. (Ex. 8 at 9-12.)

59. Thus, it was not until Immunex gained control over prosecution of the ’791 application that claims related to only the p75 TNFR (and not the p55 TNFR) were presented for examination.

60. On January 12, 2005, Immunex filed an amendment in the '790 application causing the then-pending claims to be directed to a TNFR fusion protein comprising (a) a soluble fragment of a TNF receptor, wherein the TNF receptor (i) binds TNF, (ii) has an apparent molecular weight of about 55 or 75 kD on a non-reducing polyacrylamide gel, and (iii) comprises a fragment of the amino acid sequence of SEQ ID NO: 1, 2, 3 or 4, and (b) comprises all of the domains of the constant region of a human IgG heavy chain other than the first domain of said constant region. (Ex. 9.)

61. The January 12, 2005 amendment in the '790 application was the first time during prosecution that claims directed to any aspect of the p75 TNFR were submitted for examination.

62. Thus, it was not until Immunex gained control over prosecution of the '790 application that claims related to the p75 TNFR were presented for examination.

During Prosecution of the '790 Application, Dr. Stewart Lyman Executed a False Declaration Drafted by Immunex's Lawyers that Immunex and Its Counsel, Dr. Rin-Laures and Dr. Sintich, Submitted to the Patent Office to Overcome Claim Rejections

63. On April 5, 2005, the Examiner rejected the then-pending claims in the '790 application on the basis of nonstatutory double patenting and indefiniteness. (Ex. 10.)

64. On October 5, 2005, Immunex, through its prosecuting attorney, Dr. Sharon Sintich, submitted an Amendment and Request for Reconsideration in which claims were canceled, claims were amended, and new claims were added. By this amendment, the claim set referenced only the 75 kilodalton TNFR, and all references to the 55 kilodalton TNFR were deleted. (Ex. 11.)

65. On December 14, 2005, Immunex, through its prosecuting attorney, Dr. Sintich, submitted a Supplemental Amendment that corrected typographical errors in the claims submitted on October 5, 2005. (Ex. 12.)

66. On April 3, 2006, the Examiner issued an office action concerning the '790 application, non-finally rejecting the pending claims for lack of enablement, lack of written description, and/or obviousness. (Ex. 13.)

67. On October 6, 2006, Immunex, through its prosecuting attorney, Dr. Sintich, submitted an Amendment and Request for Reconsideration in which claims were canceled, claims were amended, and new claims were added. (Ex. 14.) In response to the Examiner's written description rejection, Immunex argued that "the specification does disclose the full length amino acid sequence of TNFR and TNF-binding deletion fragments thereof by citing Smith, et al., Science 248:1019-1023 (1990) ("Smith (1990)", Exhibit G hereto)." (*Id.* at 26.)

68. On February 23, 2007, the Examiner issued an office action concerning the '790 application, finally rejecting all pending claims for, among other reasons, lack of written description under 35 U.S.C. § 112. (Ex. 15.)

69. The Examiner stated:

> [T]he broadest claims encompass <u>any</u> TNF-binding soluble fragment of a 75 kD insoluble TNF-binding receptor that comprises SEQ ID NO: 10. Therefore, this fragment can be as long as the entire extracellular domain (comprising the entirety of SEQ ID NO: 4), or it can be as small as one amino acid from SEQ ID NO: 4. However, Applicants do not teach any amino acid sequence(s) that can actually bind TNF. Applicants do not disclose any teachings demonstrating that SEQ ID NO: 4 (missing 48 amino acids of the extracellular domain of TNFR2) can bind TNF.

(*Id.* at 6-7 (emphasis original).)

70. The Examiner further stated:

> The specification does not provide evidence that Applicants were in possession of any TNF-binding soluble fragments of an insoluble 75 kD TNF-binding receptor comprising SEQ ID NO: 10. While the sequence of the entire extracellular domain of the 75 kD TNF receptor was publicly available in the references of Smith (1990) and Dembic (1990) at the time of filing of the instant application, there is no description in the instant specification of these specific full-length

> sequences, or any description that suggests using these full-length sequences in the claimed fusion proteins.

(*Id.* at 8-9.)

71. The Examiner also stated that "[w]hile the specification cites Smith (1990) on page 10, the specification does not contemplate use of the sequence of the full length extracellular domain of the receptor taught in Smith." (*Id.* at 9.) The Examiner continued, "[t]he reference to Smith in the specification does not refer to a nucleotide sequence encoding the full-length extracellular domain of the receptor disclosed in Smith." (*Id.*)

72. Figure 4 of the '790 application is the "[n]ucleotid [sic] sequence and deduced amino acid sequence for cDNA clones derived from 75/65 kD TNF-BP." (Ex. 1 at 15.) SEQ ID NO:4 in the '790 application corresponds to Figure 4. (Ex. 16 at 14.)

73. Figure 3B of Smith (1990) discloses the full length p75 TNFR protein and includes the sequence for its entire extracellular domain. (Ex. 17 at 1021.)

74. On August 6, 2007, Immunex, through its prosecuting attorney, Dr. Li-Hsien Rin-Laures, submitted an Amendment Under 37 CFR §1.116 and Request for Reconsideration (hereinafter the "August 6, 2007 response") in which claims were canceled and amended, and arguments responsive to the February 23, 2007 office action were made. (Ex. 18.)

75. Together with the August 6, 2007 response, Immunex, through its prosecuting attorney, Dr. Rin-Laures, submitted the Declaration of Stewart Lyman, Ph.D. under 37 C.F.R. § 1.132, executed on May 22, 2007, and that included Exhibits A-D. (*See* Declaration Under 37 C.F.R. § 1.132 of Stewart Lyman ("First Lyman Declaration"), attached hereto as Ex. 19.)

76. In the First Lyman Declaration, Dr. Lyman "declare[s] that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false

statements and the like so made are punishable by fine or imprisonment, or both (18 U.S.C. § 1001), and may jeopardize the validity of the application or any patent issuing thereon." (*Id.* at ¶ 25.)

77. Although Dr. Lyman executed his first declaration on May 22, 2007, he thereafter made handwritten revisions to it on July 17, 2007. (*See id.* at ¶¶ 7, 21.)

78. Together with the August 6, 2007 response, Immunex, through its prosecuting attorney, Dr. Rin-Laures, submitted a Second Declaration of Stewart Lyman, Ph.D. under 37 C.F.R. § 1.132 executed on July 17, 2007. (*See* Declaration Under 37 C.F.R. § 1.132 of Stewart Lyman ("Second Lyman Declaration"), attached hereto as Ex. 20.)

79. In the Second Lyman Declaration, Dr. Lyman "declare[s] that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both (18 U.S.C. § 1001), and may jeopardize the validity of the application or any patent issuing thereon." (*Id.* at ¶ 5.)

80. In the August 6, 2007 response, Dr. Rin-Laures, "request[ed] entry of the attached [First Lyman] Declaration to provide evidence concerning knowledge in the art and the relevance of published information to those of skill in the art." (Ex. 18 at 8.)

81. In the August 6, 2007 response, Dr. Rin-Laures described the Second Lyman Declaration as including representations from Dr. Lyman "that his factual statements and conclusions with respect to the instant application apply also to the priority application as of its priority date, and that the relevant written description of both is the same." (*Id.*)

82. In the August 6, 2007 response, Dr. Rin-Laures represented that Dr. Lyman was "qualified to attest to what one of skilled in the art would have understood from reading the application as of September 10, 1990." (*Id.* at 7-8.)

83. According to the First Lyman Declaration:

- Dr. Lyman was "a scientist at Immunex Corporation for 14 years, eventually becoming Director of Extramural Research." (Ex. 19 at ¶ 1.)
- In 1990, Dr. Lyman "was well experienced in the molecular biology of type I transmembrane receptors." (*Id.* at ¶ 5.)
- After Amgen acquired Immunex in 2002, Dr. Lyman "stayed on and worked for Amgen for three months in a transitional role" before leaving to manage his own consulting business. (*Id.* at ¶ 1.)
- At the time his declaration was submitted to the Patent Office in August 2007, Dr. Lyman owned one hundred shares of Amgen stock. (*Id.*)

84. In the August 6, 2007 response, Dr. Rin-Laures explained to the Patent Office that the First Lyman Declaration was being submitted "in order to respond to a new position with regard to the written description rejection raised by the Examiner in this Action," and "to provide evidence concerning knowledge in the art and the relevance of published information to those of skill in the art." (Ex. 18 at 7-8.) In addition, Dr. Rin-Laures told the Patent Office that the First Lyman Declaration was submitted "as supplemental support," that the proposed claim amendments were fully supported by the application and that the applicants were in possession of the invention at the time of filing. (*Id.* at 9.)

85. In the August 6, 2007 response, Dr. Rin-Laures relied on the First Lyman Declaration to rebut the Examiner's rejection that applicants did not have possession of the

invention at the time of the filing due to the absence of a description of the full-length extracellular domain of the 75 kD receptor.

86. Based on the First Lyman Declaration, Dr. Rin-Laures argued "that 'one skilled in the art at the time would have understood that the application contemplated that the entire extracellular region of p75 TNFR was a specific example of a soluble fragment of a TNF binding protein.'" (*Id.*)

87. Dr. Rin-Laures stated:

> Dr. Stewart Lyman was asked to evaluate what one skilled in the art at the time would have understood, from reading the specification. As part of this evaluation, he came to the factual conclusion that one skilled in the art would have understood that Applicants contemplated fusion of the extracellular domain of the p75 TNFR to all domains of a human immunoglobulin constant region, other than the first domain.

(*Id.* at 10.)

88. The First Lyman Declaration states,

> Since the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith, it would be clear to one of skill in the art that the protein represented by the Figure 4 sequence was the same protein described in Smith. Attached as Exhibit D is an alignment of the Figure 4 sequence with the complete sequence of p75 TNFR to illustrate this point.

(Ex. 19 at ¶ 16.)

89. The First Lyman Declaration further states,

> Second, the Office Action takes the sentences citing Smith (1990) out of the context of the entire paragraph. When the entirety of the paragraph is read, one sees that the paragraph begins with a statement indicating that this paragraph is describing soluble and non-soluble fragments of TNF binding proteins. Thus, one of skill in the art would have concluded that the citation to Smith (1990) was a reference to whatever soluble or non-soluble fragments of TNF binding proteins were described in the article. The relevant paragraph is reproduced in its entirety below:
>
> > In addition hereto, the present invention is also concerned with DNA sequences coding for proteins and soluble or non-soluble fragments thereof, which bind TNF. Thereunder there are to be

> understood, for example, DNA sequences coding for non-soluble proteins or soluble as well as non-soluble fragments thereof, which bind TNF, such DNA sequences being selected from the following
> (a) DNA sequences as given FIG. 1 or FIG. 4 as well as their complementary strands, or those which include these sequences;
> (b) DNA sequences which hybridize with sequences defined under (a) or fragments thereof;
> (c) DNA sequences which, because of the degeneracy of the genetic code, do not hybridize with sequences as defined under (a) and (b), but which code for polypeptides having exactly the same amino acid sequence.
> That is to say, the present invention embraces not only allelic variants, but also those DNA sequences which result from deletions, substitutions and additions from one or more nucleotides of the sequences given in FIG. 1 or FIG. 4, whereby in the case of the proteins coded thereby there come into consideration, just as before, TNF-BP. One sequence which results from such a deletion is described, for example, in Science 248, 1019-1023, (1990).

Specification, page 9, line 19 through page 10, line 10. Despite differences between the sequences disclosed in the application and those in Smith (1990) article, I would interpret this paragraph to mean that the Smith sequence was contemplated by the inventors because the Smith (1990) article is specifically cited.

(*Id.* at ¶ 20.)

90. Several statements in the First Lyman Declaration were demonstrably false at the time they were made to the Patent Office.

Exhibit D of the First Lyman Declaration Does Not Compare the Sequence of Figure 4 with the Complete Sequence of Smith's p75 TNFR

91. Contrary to Dr. Lyman's sworn testimony in the First Lyman Declaration, a person of ordinary skill in the art at the time of the alleged inventions of the '790 and '791 applications would have understood that Exhibit D of the First Lyman Declaration does not compare the sequence of Figure 4 of the '790 application with the complete sequence of p75 TNFR from Smith (1990).

92. A person of ordinary skill in the art would have understood that Exhibit D of the First Lyman Declaration does not contain the complete sequence of p75 TNFR from Smith (1990).

93. In Exhibit D of the First Lyman Declaration, only a portion of the amino acid sequence of p75 TNFR from Smith (1990) is depicted in the sequence alignment. In particular, the amino acid sequence of p75 TNFR from Smith (1990), which is on the upper line of the alignment, begins at position 51, not position 1. For at least this reason, a person of ordinary skill in the art at the time of the alleged inventions of the '790 and '791 applications, and as of the date of the First Lyman Declaration, would have understood that Exhibit D of the First Lyman Declaration does not contain the complete sequence of p75 TNFR from Smith (1990) because amino acids 1-50 are missing, and is not "an alignment of the Figure 4 sequence with the complete sequence of the p75 TNFR [from Smith (1990)] . . ." as Dr. Lyman testified. (Ex. 19 at ¶ 16.)

94. A person of ordinary skill in the art would have also understood that Exhibit D of the First Lyman Declaration does not compare the identities of the complete amino acid sequence of the p75 TNFR from Smith (1990) and the amino acid sequence of Figure 4 of the '790 application.

95. Exhibit D of the First Lyman Declaration compares the sequence of Figure 4 of the '790 application with only a portion of the sequence of p75 TNFR from Smith (1990).

96. In Exhibit D of the First Lyman Declaration, the amino acid sequence of a portion of the p75 TNFR from Smith (1990) is depicted on the top line of the sequence alignment. That portion of the sequence depicts amino acid residues 51 to 461, with one introduced gap.

97. In Exhibit D of the First Lyman Declaration, the amino acid sequence of Figure 4 of the ’790 application is depicted in full on the bottom line of the sequence alignment and includes amino acid residues 1 to 392.

98. Exhibit D of the First Lyman Declaration compares amino acids 1 to 392 of the sequence of Figure 4 of the ’790 application with amino acids 71 to 461 (including one introduced gap) of the sequence of p75 TNFR from Smith (1990).

99. Thus, a person of ordinary skill in the art would have understood that Exhibit D of the First Lyman Declaration compares the amino acid sequence of Figure 4 of the ’790 application with only a subsequence of the amino acid sequence of the p75 TNFR from Smith (1990), and not the complete amino acid sequence of the p75 TNFR from Smith (1990).

100. Exhibit D of the First Lyman Declaration reports a “percent similarity” and “percent identity” of 98.977 percent between the amino acid sequence of Figure 4 of the ’790 application and the subsequence of p75 TNFR from Smith (1990) comprised of amino acids 71 to 461 (including one gap).

101. Exhibit D of the First Lyman Declaration describes only that the matching regions between these two sequences have a 98.977 percent identity.

102. On information and belief, a person of ordinary skill in the art would understand the proper way to characterize the percent identity of the overlapping portions of the sequences of Figure 4 of the ’790 application and the p75 TNFR from Smith (1990) would be to specify that the percent identity only applied to the specific portions of the sequences that were compared. In other words, a person of ordinary skill would not have said the amino acid sequence of Figure 4 of the ’790 application is almost identical to that of Smith (1990) without

qualifying that only a subsequence of Smith (1990) was used in the determination of sequence identity. The First Lyman Declaration did not do so.

103. Exhibit D of the First Lyman Declaration does not describe the percent similarity or percent identity between the amino acid sequence of Figure 4 of the '790 application and the complete amino acid sequence of the p75 TNFR from Smith (1990).

104. The sequence of Figure 4 of the '790 application is not "almost identical (almost 99% identical) to that of Smith" as Dr. Lyman told the Patent Office in the First Lyman Declaration.

105. At trial in *Immunex Corp., et al. v. Sandoz Inc., et al.*, No. 2:16-cv-01118-CCC-MF (D.N.J.), Sandoz's expert, Dr. Daniel Capon, testified regarding paragraph 16 and Exhibit D of the First Lyman Declaration. (*See* Trial Transcript, Day 3 PM, attached hereto as Ex. 21.)

106. Dr. Capon is a known leader in the field of fusion proteins, as well as the lead author on prior art that served as the basis of multiple rejections of the '182 and '522 patents during prosecution. (*See e.g.,* Ex. 13 at 10-12, Ex. 15 at 13.)

107. Dr. Capon testified that paragraph 16 of the First Lyman Declaration contains a "false statement":

> Q. This says, 'Since the amino acid sequence of Figure 4 is almost identical, almost 99% identical, to that of Smith, it would be clear to one of skill in the art that the protein represented by the Figure 4 sequence was the same protein described in Smith.' Is that a true statement, Doctor?
>
> A. No, it's a false statement.

(Ex. 21 at 105:7-13.)

108. Dr. Capon also testified the statement above from Dr. Lyman's declaration is "on its face untrue and misleading." (*Id.* at 109:8-17.)

109. Dr. Capon further testified that Exhibit D to the First Lyman Declaration does not contain the complete sequence from Smith (1990). (*Id.* at 105:18-106:2.)

110. Dr. Capon further testified there was an "over 20 percent difference" in the complete sequence of Smith (1990) as compared to the sequence of Figure 4. (*Id.* at 106:3-6.)

111. Dr. Capon testified that the protein sequences described in Smith (1990) and Figure 4 were so different as to be considered "different protein[s]." (*Id.* at 106:7-15.)

112. Dr. Capon further characterized the computerized alignment of the amino acid sequences in Exhibit D of the First Lyman Declaration and the conclusion of 98.977 percent identity between them as "[a] classic case of garbage in, garbage out." (*Id.* at 108:9-24.)

113. Dr. Capon further testified that the conclusion of 98.977 percent identity reached in Exhibit D of the First Lyman Declaration relates only to where the two sequences are overlapping, and that is "not what Dr. Lyman testified to." (*Id.* at 108:25-109:17.)

114. Dr. Capon's testimony further demonstrates the falsity of the statements in paragraph 16 of the First Lyman Declaration that (a) "the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith," and (b) that "Attached as Exhibit D is an alignment of the Figure 4 sequence with the complete sequence of p75 TNFR to illustrate this point."

115. At trial in *Immunex Corp., et al. v. Sandoz Inc., et al.*, No. 2:16-cv-01118-CCC-MF (D.N.J.), Dr. Lyman testified by deposition.[5]

116. Dr. Lyman testified "that the reference to Smith 1990 in the specification does not direct a POSA to '[u]se Smith to complete the sequence of Figure 4.'" Defendants' Post-Trial

[5] The deposition testimony of Dr. Lyman played at the trial in *Immunex Corp., et al. v. Sandoz Inc., et al.*, No. 2:16-cv-01118-CCC-MF (D.N.J.) is not currently publicly available.

Brief at 29-30, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 646, Oct. 23, 2018) (D.N.J.)

117. This testimony is inconsistent with Dr. Lyman's sworn testimony in the First Lyman Declaration, which stated at paragraph 20, "I would interpret this paragraph to mean that the Smith sequence was contemplated by the inventors because the Smith (1990) article is specifically cited." (Ex. 19 at ¶20.)

118. On information and belief, Dr. Lyman testified that he did not personally write his declaration; instead, Immunex's attorneys drafted the declaration in the first instance for him to review and sign.

The Patent Office Relies On Dr. Lyman's False Declaration During Prosecution of the '790 Application and Withdraws the Written Description Rejection

119. On August 23, 2007, Immunex, through its prosecuting attorney, William K. Merkel, filed a Notice of Appeal from the Examiner to the Board of Patent Appeals and Interferences and a Request for Oral Hearing before the Board of Patent Appeals and Interferences. (Ex. 22.)

120. On October 9, 2007 the Examiner issued an Advisory Action before the Filing of an Appeal Brief. (Ex. 23.) The Advisory Action noted that "the affidavit or other evidence" submitted on August 6, 2007 was entered. (*Id.* at 2.) The Examiner considered the First Lyman Declaration but found it "is not sufficient to overcome the rejection of the claims" and listed several reasons. (*Id*. at 5.)

121. On February 28, 2008, Immunex, through its prosecuting attorneys, Dr. Rin-Laures and Dr. Sintich, submitted an Appeal Brief to the Board of Patent Appeals and Interferences ("the Board"). (Ex. 24.) Among other things, Immunex's Appeal Brief addressed a written description rejection. (*Id*.)

122. In its Appeal Brief, Immunex's counsel relied heavily on the First Lyman Declaration, referencing it more than 25 times.

123. Indeed, the Appeal Brief states: "In response to the Final Office Action, Appellants submitted a Declaration Under 37 C.F.R. 1.132 of Stewart Lyman, Ph.D. (the 'Lyman Declaration') [Appendix B-143] to provide evidence regarding what the specification reasonably conveyed to the skilled artisan." (Ex. 24 at 18.)

124. As one example, Dr. Rin-Laures and Dr. Sintich argued against the pending written description rejection by invoking the First Lyman Declaration, including paragraph 16, as follows:

> Factual evidence in the Lyman Declaration, paragraph 17 [Appendix B-143], confirms that the skilled artisan would have understood at the time that '[a]lthough the working examples exemplify a fusion protein comprising the entire extracellular region of the 55 kd TNFR, it is readily apparent that the application's description applies equally to the 75 kd TNFR.' Factual evidence in the Lyman Declaration, paragraph 16 [Appendix B-143], also confirms that the partial DNA sequence of p75 TNFR in Figure 4 would have been sufficient for a skilled artisan to determine that the protein represented by the Figure 4 sequence was the same as that disclosed in Smith (1990) [Appendix B-211].

(*Id.* at 24.)

125. Dr. Rin-Laures and Dr. Sintich further asserted that "[t]he Examiner erred by substituting an unsupported personal interpretation of the specification for the factual evidence in the Lyman Declaration regarding what the specification conveyed to the skilled artisan." (*Id.*)

126. Dr. Rin-Laures and Dr. Sintich also argued that "Paragraph 16 [of the First Lyman Declaration] states that it would be clear to the skilled artisan that the Smith (1990) sequence is the same p75 TNFR referenced in the present specification and in Figure 4. This statement is supported by evidence showing an alignment of the Smith (1990) sequence with the Figure 4 sequence." (*Id.* at 27-28.)

127. Dr. Rin-Laures and Dr. Sintich further argued "[t]he Lyman Declaration provides evidence that one of skill in the art, upon reading the specification in view of the knowledge in the art at the time of filing, would believe that the Appellants were in possession of the claimed invention at the time of filing." (*Id.* at 29.)

128. Dr. Rin-Laures and Dr. Sintich urged "[t]he Board should find the Lyman Declaration in this case to be [] credible." (*Id.*)

129. On May 26, 2009, Immunex submitted a Reply Brief through Dr. Rin-Laures and Dr. Sintich. The Reply Brief again relied on the First Lyman Declaration.

130. For example, the Reply Brief states:

> The Examiner has also committed legal error by insisting on his personal interpretation of what the specification conveys to the skilled artisan, in the face of contrary factual evidence provided in the Lyman Declaration. *See In re Alton*, 76 F.3d 1168, 1174, 37 U.S.P.Q.2d 1578, 1582-83 (Fed. Cir. 1996). The Lyman Declaration [Appendix B-143] fully rebuts the Examiner's unsupported interpretation of the specification.

(Ex. 25 at 15.)

131. During oral argument for the appeal, held on November 2, 2010, Dr. Rin-Laures again relied on the First Lyman Declaration, representing to the Board that "the Examiner disregarded unrebutted, declaratory testimony from Dr. Lyman that one of skill in the art understood that the description conveyed using the entire extra-cellular domain or fragments." (Ex. 26 at 3:15-17.)

132. Dr. Rin-Laures further represented during oral argument that "[w]e provided declaratory testimony from Dr. Lymon[sic] saying when you see the term soluble fragment the skilled artisan understands that to mean the extracellular domain of a receptor or fragment of that receptor." (*Id.* at 6:5-8.)

133. The Board issued a Decision on Appeal on November 22, 2010. The Board held that the written description supported the pending claim scope. (Ex. 27.)

134. In its Decision, the Board noted Immunex had put forth the First Lyman Declaration "in support of the position that the complete gene sequence of the 75Kd TNF binding peptide was known in the art at the time of filing of the instant Specification." (*Id.* at 6.)

135. In its Decision, the Board agreed with Immunex "that the record supports the fact that the art was aware of the entire gene sequence of the 75kD TNF binding peptide. Thus, when the written description is read in view of the state of the art, we find that the written description supports the pending claim scope." (*Id.*)

136. At trial in *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (D.N.J.), Plaintiffs repeatedly admitted that the Board relied on the First Lyman Declaration in withdrawing the written description rejection. (Ex. 21 at 93, 94, 95.)

137. The '790 application subsequently issued as the '182 patent on November 22, 2011.

Immunex Submitted the First Lyman Declaration and Another Declaration from Dr. Lyman Containing a False Statement During Prosecution of the '791 Application

138. The '790 and '791 applications, as originally filed, shared a common specification. Notably, both the '790 application and the '791 application contained the same Figure 4 (which is the same Figure 4 referenced in Exhibit D of the First Lyman Declaration).[6] The prosecution of the '791 application was conducted mainly by Examiner Ronald Schwadron, who was not involved in the examination of the '790 application.

[6] After the '791 application was allowed, applicants enlarged the font size used in Figure 4, which thereby increased the number of sheets Figure 4 spanned, from one sheet to four sheets. As a result, applicants updated the title of the Figure to Figure 4A-4D to account for the additional sheets.

139. On August 30, 2007, Immunex, through its counsel, William Merkel, submitted an Amendment and Response to Office Action Mailed March 12, 2007. (Ex. 28.)

140. In the August 30, 2007 response, Immunex attempted to amend the specification of the '791 application to "incorporate[] by reference herein" the subject matter disclosed in Smith (1990). (Ex. 28 at 4.) In addition, Immunex added by amendment a new figure, Figure 5, which it described as the "[d]educed amino acid sequence (SEQ ID NO: 27) for a 75/65 kD TNF-BP cDNA clone described in Smith et al., Science *248*, 1019-1023, (1990)." (*Id*.)

141. In addition, in its August 30, 2007 response, Immunex "note[d] that corresponding claims to the p75 TNFR fusion proteins are currently under prosecution in U.S. Patent Application No. 08/444,790 (denoted herein as 'the '790 Application'). The Examiner in the '790 Application rejected these claims under 35 U.S.C. §§ 103 and 112, first paragraph." (*Id.* at 19.)

142. Immunex submitted with the August 30, 2007 response "the two most recent Office Actions, mailed April 3, 2006 and February 23, 2007" from the prosecution of the '790 application. (*Id.*)

143. In addition, Immunex also submitted the First and Second Lyman Declarations with the August 30, 2007 response as described below:

> [C]omplete copies of Applicants responses in the '790 Application (Exhibits III and IV), mailed October 3, 2006 and August 2, 2007, respectively, with exhibits and accompanying declarations, including: (a) the Third Declaration of Dr. Werner Lesslauer Under 37 C.F.R. § 1.132 (Exhibit V), (b) the Declaration Under 37 C.F.R. § 1.132 of Stewart Lyman, Ph.D. (Exhibit VI), and (c) the Second Declaration of Stewart Lyman, Ph.D. Under 37 C.F.R. § 1.132 (Exhibit VII). For completeness of the record, Applicants also submit herewith the Declaration [II] of Dr. Werner Lesslauer Under 37 C.F.R. § 1.132 (Exhibit VIII), originally filed in parent application U.S. Ser. No. 08/095,640. An Information Disclosure Statement containing a 1449 form listing the references referred to in these responses and declarations will be filed in the near future.

(*Id*.)

144. The submission of the First Lyman Declaration included Exhibit D. Immunex requested "that the Examiner in the present application consider the evidence submitted in the '790 Application in examining the present claims directed to polynucleotides encoding p75 TNFR fusion proteins, vectors, host cells, and methods of using such polynucleotides to produce protein." (*Id*.)

145. On June 8, 2010, the Examiner issued a non-final office action, rejecting the claims of the '791 application as lacking adequate written description support, among other reasons. (Ex. 29.)

146. On September 8, 2010, Immunex, through its counsel, submitted an Amendment and Request for Reconsideration in Response to Non-Final Office Action. (Ex. 30.) With that response, Immunex's counsel, Dr. Rin-Laures, submitted to the Patent Office another declaration from Dr. Lyman dated September 3, 2010 ("Third Lyman Declaration"). (Ex. 36.)

147. Paragraph 14 of the Third Lyman Declaration states Dr. Lyman "declare[s] that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both (18 U.S.C. § 1001), and may jeopardize the validity of the application or any patent issuing thereon." (*Id.* at ¶ 14.)

148. In the September 8, 2010 response, Immunex's counsel, Dr. Rin-Laures, relied on the Third Lyman Declaration as "provid[ing] further evidence that the skilled artisan would have understood Applicants possessed and meant to incorporate the sequence of Smith (1990)." (Ex. 30 at 18.)

149. The Third Lyman Declaration is similar to, but different than, the First Lyman Declaration. (*Compare* Ex. 36 *with* Ex. 19.)

150. Exhibit D from the First Lyman Declaration is presented in the Third Lyman Declaration as Exhibit B.

151. When Dr. Lyman characterized Exhibit B in the Third Lyman Declaration, Dr. Lyman stated:

> Since the amino acid sequence of Figure 4 is almost identical (almost 99%) identical to that of Smith (1990), it would be clear to one of skill in the art that the sequence of Figure 4 was a partial sequence of the same protein described in Smith (1990). Attached as Exhibit B is an alignment of the Figure 4 sequence with part of the Smith (1990) sequence of p75 TNFR to illustrate this point.

(Ex. 36 at ¶ 9.)

152. This description in the Third Lyman Declaration of the comparison of sequences from Figure 4 and Smith (1990) differs from Dr. Lyman's description of the same in the First Lyman Declaration, which states:

> Since the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith, it would be clear to one of skill in the art that the protein represented by the Figure 4 sequence was the same protein described in Smith. Attached as Exhibit D is an alignment of the Figure 4 sequence with the complete sequence of p75 TNFR to illustrate this point.

(Ex. 19 at 16.)

153. Specifically, in the Third Lyman Declaration, Dr. Lyman states Exhibit B is an alignment of the Figure 4 sequence with *part* of the Smith (1990) sequence whereas the First Lyman Declaration states the alignment uses the *complete* sequence from Smith (1990).

154. Dr. Lyman and the Immunex attorneys failed to bring to the Examiner's attention this difference between the First and Third Lyman Declarations at the time the Third Lyman Declaration was submitted to the Patent Office on September 8, 2010, or anytime thereafter.

155. Despite acknowledging in the Third Lyman Declaration that the alignment presented in the attached Exhibit B utilized only part of the sequence from Smith (1990), Dr. Lyman nonetheless concludes in the Third Lyman Declaration: "[d]espite differences between the sequences disclosed in the application and those in the Smith (1990) article, the amino acid sequences are nearly 99% identical overall." (Ex. 36 at ¶ 10.)

156. For the reasons discussed above in the context of the First Lyman Declaration, this statement is false.

157. Likewise for the reasons discussed above in the context of the First Lyman Declaration, Dr. Lyman's repeat statement in paragraph 9 of the Third Lyman Declaration that "the amino acid sequence of Figure 4 is almost identical (almost 99%) identical to that of Smith (1990)," is false.

158. Though not stated in the First Lyman Declaration, the Third Lyman Declaration states: "[t]he application clearly identifies the reference publication and the application clearly conveys an intent to incorporate by reference the sequences in Smith (1990) of soluble or non-soluble TNF receptors." (*Id.* at ¶ 13.)

159. In the September 8, 2010 response, Dr. Rin-Laures relied on paragraph 13 of the Third Lyman Declaration to argue "the application as filed clearly conveys an intent to incorporate the [Smith] material by reference." (Ex. 30 at 19.)

160. Despite being submitted to the Patent Office during prosecution of the '791 application, the Third Lyman Declaration was not submitted to or raised with the Patent Office during prosecution of the co-pending '790 application.

161. In particular, neither Immunex nor any of its prosecuting attorneys submitted or raised the Third Lyman Declaration during the appeal in the '790 application, even though that

appeal was pending as of September 2010 and oral argument was heard in November 2010, over two months after the Third Lyman Declaration was submitted to the Patent Office during prosecution of the '791 application on September 8, 2010.

162. On October 15, 2010, the Examiner again issued another non-final office action, rejecting the pending claims of the '791 application as lacking adequate written description support, among other reasons. (Ex. 31.)

163. On March 15, 2011, Immunex, through its counsel, submitted an Amendment and Request for Reconsideration in Response to Non-Final Office Action. In that response, Immunex's counsel, Dr. Rin-Laures, cited the Board's decision regarding the '790 application, which referenced the First Lyman Declaration, to support an argument that the rejected claims of the '791 application were non-obvious and supported by adequate written description. Specifically, Dr. Rin-Laures stated, "[t]he Board of Patent Appeals and Interferences in the '790 application concluded that the 'written description supports the pending claim scope.'" (Ex. 32 at 11.) Dr. Rin-Laures further argued that "the written description rejection should be withdrawn in view of the dispositive decision of the Board" in the '790 application." (*Id.* at 13.)

164. On June 24, 2011, the Examiner issued an office action in the '791 application finally rejecting claims 233-237, 239-242 under "35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." (Ex. 33 at 4.)

165. On November 23, 2011, Immunex, through its counsel, Dr. Rin-Laures, submitted an Amendment and Response to the final rejection in the '791 application. With regard to the

written description rejection, Immunex again relied on the Board's decision in the '790 application, stating, "[o]ther rejections under 35 U.S.C. § 112, first paragraph, were withdrawn in view of the Board's decision in application no. 08/444,790, now U.S. Patent No. 8,063,182." (Ex. 34 at 5.)

166. On February 15, 2012, the claims of the '791 application were allowed. (Ex. 35.)

167. Tainted by the same deceptive conduct that permitted the '790 application to issue, and the additional false statements contained in the Third Lyman Declaration, the '791 application subsequently issued as the '522 patent on April 24, 2012.

Basis for Inequitable Conduct: Submitting False Declarations

168. The '182 and '522 patents are unenforceable because Immunex, one or more of Immunex's patent prosecution counsel, including Dr. Rin-Laures and Dr. Sintich, and Immunex's declarant, Dr. Stewart Lyman, breached their duties of candor and good faith to the Patent Office during prosecution of the '182 and '522 patents by submitting false statements in sworn declarations, thereby committing inequitable conduct. In order to secure allowance of the '182 and '522 patents and additional patent protection for ENBREL®, Dr. Rin-Laures, Dr. Sintich, and Dr. Lyman knowingly and willfully made and/or relied upon false statements that are misleading, misrepresented material facts and/or omitted material facts.

(1) <u>What Are The False Statements</u>

169. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

170. The submission of knowingly false and misleading statements, like those contained in the First and Third Lyman Declarations, is, on its own, inherently material to the patent prosecution process and constitutes egregious misconduct.

171. One or more people, including Dr. Rin-Laures, Dr. Sintich, and Dr. Lyman, made false statements that were misleading, misrepresented material facts, and/or omitted material facts to the Examiner and Board during prosecution of the '182 and '522 patents. These false statements involved the nature of the protein sequence disclosed in Figure 4 of the '790 application and conclusions as to what a person of ordinary skill in the art would have drawn from the specification.

172. As set forth above, Dr. Lyman testified in the First Lyman Declaration as follows:

> Since the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith, it would be clear to one of skill in the art that the protein represented by the Figure 4 sequence was the same protein described in Smith. Attached as Exhibit D is an alignment of the Figure 4 sequence with the complete sequence of p75 TNFR to illustrate this point.

(Ex. 19 at □ 16.)

173. As also set forth above, Dr. Lyman testified in the Third Lyman Declaration that: "[d]espite differences between the sequences disclosed in the application and those in the Smith (1990) article, the amino acid sequences are nearly 99% identical overall." (Ex. 36 at ¶ 10; *see also id.* at ¶ 9 ("Since the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith (1990)…".))

174. These statements from the First Lyman Declaration and Third Lyman Declaration are demonstrably false statements.

175. The first sentence of the First Lyman Declaration ["Since the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith, it would be clear to one of skill in the art that the protein represented by the Figure 4 sequence was the same protein described in Smith"] and the statements in the Third Lyman Declaration ["[d]espite differences between the sequences disclosed in the application and those in the Smith (1990)

article, the amino acid sequences are nearly 99% identical overall" and "the amino acid sequence of Figure 4 is almost identical (almost 99% identical) to that of Smith (1990)"] are false because in fact the sequences of Figure 4 and that of Smith (1990) are not almost (or nearly) 99% identical. Dr. Capon testified there is an "over 20 percent difference" in the sequence of Smith and the sequence of Figure 4. (Ex. 21 at 106:3-6.) Dr. Lyman's statements in the First and Third Lyman Declarations regarding a 99% identity between the sequences disregard the fact that the complete sequence of Smith (1990) was not used in the calculation of sequence identity, and instead only the overlapping regions between the Figure 4 and Smith (1990) sequences was used.

176. The second sentence of paragraph 16 of the First Lyman Declaration is false because, as discussed above, Exhibit D is not an alignment of the Figure 4 sequence with the complete sequence of p75 TNFR—rather, only a subset of the complete sequence of p75 TNFR is used in Exhibit D. By Dr. Lyman's own admission in the Third Lyman Declaration—which was never brought to the attention of the Patent Office during prosecution of the '790 application, the complete sequence of p75 TNFR was not used in the alignment set forth in Exhibit D to the First Lyman Declaration and Exhibit B of the Third Lyman Declaration. (Ex. 36 at ¶ 9.) Furthermore, Dr. Capon testified that Exhibit D of the First Lyman Declaration does not contain "the complete sequence" from Smith (1990). (Ex. 21 at 105:18-106:2.) In addition, Dr. Lyman's statement is misleading because it conveys the wrong impression of what one of skill in the art would have understood regarding the comparison between the sequence of Figure 4 and the complete sequence from Smith (1990).

177. Paragraph 20 of the First Lyman Declaration also contains a false and misleading statement. Paragraph 20 states, "I would interpret this paragraph to mean that the Smith sequence was contemplated by the inventors because the Smith (1990) article is

specifically cited." (Ex. 19 at 20.) Similarly, paragraph 13 of the Third Lyman Declaration states "the application clearly conveys an intent to incorporate by reference the sequences in Smith (1990) of soluble or non-soluble TNF receptors." (Ex. 36 at ¶ 13.) However, Dr. Lyman testified in 2018 "that the reference to Smith 1990 in the specification does not direct a POSA to '[u]se Smith to complete the sequence of Figure 4.'" Defendants' Post-Trial Brief at 29-30, *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF (ECF No. 646, Oct. 23, 2018) (D.N.J.) Thus, by Dr. Lyman's own admission, paragraph 20 of the First Lyman Declaration and paragraph 13 of the Third Lyman Declaration contain a false statement.

178. On information and belief, the failure of Dr. Rin-Laures, Dr. Sintich, Dr. Lyman, and Immunex to disclose accurate and truthful information to the Patent Office regarding the nature of the protein sequence disclosed in Figure 4 of the '790 and '791 applications and conclusions as to what a person of ordinary skill in the art would have drawn from the specification was both knowing and willful, and was specifically intended to induce the Patent Office to issue patent claims it would not otherwise have issued.

(2) Who Made the False Statements

179. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

180. As shown above, the false statements were made by Immunex's declarant, and relied on by its patent prosecution counsel, Dr. Rin-Laures and Dr. Sintich. In particular, Dr. Lyman made false statements regarding the nature of the protein sequence disclosed in Figure 4 of the '790 application and conclusions as to what a person of ordinary skill in the art would have drawn from the specification.

181. At the time the false statements were made, Dr. Lyman knew of and acknowledged his duty of candor to the Patent Office. Indeed, in both the First Lyman Declaration and the Third Lyman Declaration he stated, "I further declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both (18 U.S.C. § 1001), and may jeopardize the validity of the application or any patent issuing thereon." (Ex. 19 at □ 25; Ex. 36 at ¶ 14.)

182. By failing to sufficiently investigate the factual bases of the opinions and conclusions set forth in his declarations, and the evidence submitted with the declarations, which on information and belief was drafted for him by the Immunex's attorneys, and failing to correct the misstatements bearing his signature, Dr. Lyman committed inequitable conduct before the Patent Office.

183. Likewise, as described above, on information and belief, as experienced patent counsel, Dr. Rin-Laures and Dr. Sintich knew they owed duties of candor and good faith to the Patent Office. As such, each had the responsibility during the prosecution of the '182 and '522 patents to ensure that the Patent Office was apprised of all material information and had not been misled. By submitting and relying on a declaration with false statements regarding the similarities between the sequence of Figure 4 in the '790 application and the Smith (1990) protein sequence, and the contents of Exhibit D of the First Lyman Declaration, these attorneys knowingly and intentionally facilitated the submission of false and misleading statements to the Patent Office.

184. In addition, Dr. Rin-Laures and Dr. Sintich further breached their duties of candor by (1) failing to disclose to the Examiner of the '791 application the change that was made in the Third Lyman Declaration regarding the characterization of the sequence alignment, and (2) by failing to submit the Third Lyman Declaration during prosecution of the '790 application and disclosing to the Examiner and Board the aforementioned change. On information and belief, they did so with the specific intent to deceive the Patent Office so that the claims of the '790 and '791 applications would be allowed.

185. As experienced patent counsel working on behalf of a sophisticated company, Dr. Rin-Laures and Dr. Sintich (who held either M.D.s or Ph.D.s in relevant fields) were well-versed in the subject matter of these claims, and would have and should have known that false and misleading nature of the statements within the First Lyman Declaration and Third Lyman Declaration identified herein. In fact, in its Amendment and Request for Reconsideration In Response to Non-Final Office Action on September 8, 2010, Dr. Rin-Laures stated Figure 4 was "a mostly complete p75 TNFR cDNA sequence (Figure 4) encoding 392 amino acids of the total 461 amino acids of p75 TNFR." (Ex. 30 at 11.)

186. Roche, as the purported Patent Owner, also owed a duty of candor and good faith to the Patent Office during prosecution of the '790 and '791 applications, as it has admitted.

187. At the time Roche was directing prosecution of the '182 and '522 patent application, Roche appeared to appropriately characterize comparisons between given amino acid sequences. For example, in the Remarks made on February 28, 1997 in the '790 application, Roche stated, "Figure 2a-2b of Smith [U.S. Patent No. 5,395,760] and Figure 4 of the subject ['790] application (a 75 kD protein) depict *almost the same* amino acid sequence *between amino acid numbers 49-439 and 1-392, respectively*." (Ex. 2 at 6 (emphasis added).)

Specifically, Roche identified the particular portions of the sequences being compared and characterized the comparison as "almost the same" only with respect to the enumerated amino acids.

188. On information and belief, the false statements made by Dr. Lyman on behalf of Immunex and propagated by Drs. Rin-Laures and Sintich were intentional and made for the purposes of deceiving the Patent Office to gain allowance of the claims.

(3) When Were the False Statements Made

189. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

190. The false statements were made during prosecution of the '182 and '522 patents, beginning with the filing of the First Lyman Declaration. In particular, the false statements were made or relied upon during the prosecution of the '790 application leading to the '182 patent at the following exemplary times and places:

- August 6, 2007, Amendment Under 37 CFR § 1.116 And Request for Reconsideration (Ex. 18.)
- February 28, 2008, Appeal Brief (Ex. 24.)
- May 26, 2009, Reply Brief (Ex. 25.)
- November 2, 2010, Oral Argument Transcript (Ex. 26.)
- November 22, 2010, Decision on Appeal (Ex. 27.)

191. The First Lyman Declaration was submitted and relied upon during prosecution of the '791 application leading to the '522 patent, including at the following exemplary times and places:

- August 30, 2007, Amendment and Response to Office Action (Ex. 28.)

- March 15, 2011, Amendment and Request for Reconsideration in Response to Non-Final Office Action (Ex. 32.)
- November 23, 2011, Amendment and Response (Ex. 34.)

192. In addition, the Third Lyman Declaration, which also contained a false statement, was submitted on September 8, 2010 and relied upon during the prosecution of the '791 application. (Ex. 36.) The Third Lyman Declaration was never submitted or raised during the co-pending prosecution of the '790 application.

(4) Claims and Limitations to Which the Misrepresentations Apply

193. The false statements regarding the nature of the protein sequence disclosed in Figure 4 and the conclusions as to what a person of ordinary skill in the art would have drawn from the specification affect every claim of the '182 and '522 patents. Additionally, identified instances of inequitable conduct committed with respect to any independent claim infect and taint any claims dependent thereto, including all related patent family members and later patent family members.

194. The submission of knowingly false and misleading statements, like those contained in the First and Third Lyman Declarations, is, on its own, inherently material and constitutes egregious misconduct.

195. On information and belief, if Immunex, Dr. Rin-Laures, Dr. Sintich, Dr. Lyman and the other individuals and attorneys associated with the prosecution of the '182 and '522 patents had not misrepresented the nature of the protein sequence disclosed in Figure 4 and the conclusions as to what a person of ordinary skill in the art would have drawn from the specification, the Patent Office would not have issued either the '182 or the '522 patents.

(5) Where the False Statements Were Made

196. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

197. False statements were made in the First Lyman Declaration, which was submitted and relied upon during the prosecution of the '182 and '522 patents. As discussed above, applicants relied on the representations in the First Lyman Declaration throughout the prosecution of the '182 and '522 patents, including on appeal.

198. The Third Lyman Declaration also contained a false statement, which was relied upon during the prosecution of the '522 patent.

(6) How the False Statements Were Used by the Examiner

199. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

200. The submission of knowingly false and misleading statements, like those contained in the First and Third Lyman Declarations, is, on its own, inherently material to the patent prosecution process.

201. In addition, as discussed above, the Board, and the Examiner following the Board's decision, relied on Immunex's arguments and assertions regarding the statements in the First Lyman Declaration. On information and belief, the Examiner of the '182 and '522 patent applications, and the Board, would have discounted the First Lyman Declaration had they known that Dr. Lyman's characterizations regarding Figure 4 and Exhibit D were false. Notably, the Third Lyman Declaration was not submitted during the prosecution of the '790 application, including to the Board on appeal. Thus, had the material information identified above been properly presented, not mischaracterized as showing the applicants were in possession of the full

sequence p75 TNFR, the Board would have rejected the claims at least on account of lack of written description support.

202. This would have resulted in the rejection of the claims in the ’790 and ’791 patent applications.

(7) Why the False Statements Are Material and Not Cumulative

203. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

204. The submission of knowingly false and misleading statements, like those contained in the First and Third Lyman Declarations, is, on its own, inherently material and constitutes egregious misconduct.

205. In addition, the statements in the First Lyman Declaration and Immunex’s remarks relying on the First Lyman Declaration regarding the nature of the protein sequence disclosed in Figure 4 and the conclusions as to what a person of ordinary skill in the art would have drawn from the specification are material because they were made in direct response to the Examiner’s rejections under 35 U.S.C. § 112 for lack of written description. Dr. Lyman’s false presentation of the data contained in the ’790 application and his declaration (and in particular Exhibit D), and Immunex’s reliance on it during prosecution, created a false impression that the specification adequately described the full sequence of the p75 TNFR and its use in a fusion protein. Specifically, the foregoing information is material because it establishes that the specification of the ’182 and ’522 patents did not adequately describe—and thus the inventors did not possess—the full-length sequence of p75 TNFR and soluble TNF-binding fragments thereof as of the effective filing date of the applications.

206. As discussed above, Immunex repeatedly relied upon the false statements from the First Lyman Declaration in its appeal briefs, referencing the First Lyman Declaration more than 25 times. Moreover, during oral argument before the Board, Dr. Rin-Laures advanced the same false statements by invoking Dr. Lyman's declaration.

207. The Board cited and relied upon the First Lyman Declaration in evaluating written description and reversing the Examiner's written description rejection. But for Dr. Lyman's false declaration prepared by Immunex's counsel and proffered by Immunex's counsel during oral argument, the Board would not have allowed the patent claims. These statements were thus material to the Board's decision.

208. The information misrepresented in the First Lyman Declaration is not cumulative because the Examiner of the '790 application and Board were never presented with the correct facts showing the true identity and differences between the full-length sequence of p75 TNFR and the protein sequence disclosed in Figure 4 of the specification. Nor was the Board aware that Immunex's attorneys drafted the First Lyman Declaration, and that Dr. Lyman admitted, by choosing to use different language in the Third Lyman Declaration, that his characterization of the sequence alignment in the First Lyman Declaration, at paragraph 16, was incorrect because the alignment used only a part of the sequence of Smith and not the complete sequence of Smith

209. Because Immunex, through its attorneys, Dr. Rin-Laures and Dr. Sintich, mischaracterized the information that was provided to the Examiner through Dr. Lyman's declarations, the Patent Office did not have an opportunity to consider the true facts.

210. This inequitable conduct on the part of Dr. Lyman, Dr. Rin-Laures and Dr. Sintich, renders the '182 and '522 patents unenforceable.

(8) Why the Facts Establish A Specific Intent To Deceive As the Single Most Reasonable Inference

211. Samsung Bioepis incorporates each of the preceding paragraphs in its Sixth Defense as if fully set forth herein.

212. Immunex was motivated to advance false statements during the prosecution of the '790 and '791 applications to secure their allowance and to use the resulting patents to protect their billion-dollar drug ENBREL® from biosimilar competition and to preserve its price.

213. In 2002, Amgen completed its acquisition of Immunex, acquiring all rights to ENBREL®. Amgen recognized the value of patents covering its products. Amgen's 2002 10-K states, "[p]atents are very important to the Company in establishing proprietary rights to the products it has developed or licensed," which at the time included ENBREL®. (Ex. 4 at 19.)

214. By 2006, federal legislation was proposed to facilitate an abbreviated pathway for the approval of biosimilar drugs.

215. By 2007, annual sales of ENBREL® in the United States exceeded $3 billion dollars.

216. On information and belief, Immunex and its prosecuting attorneys were aware of that legislation at the time the First Lyman Declaration was being drafted and was submitted during prosecution of the '790 application.

217. By 2009, the Biologics Price Competition and Innovation Act ("BPCIA"), which provides such an abbreviated pathway to market for biosimilar drugs, was enacted.

218. On information and belief, Immunex and its prosecuting attorneys were aware of the BPCIA by the date of the November 2010 oral argument for Immunex's appeal during prosecution of the '790 application.

219. In light of the pending legislative efforts to facilitate biosimilar drug approval and the enactment of that legislation, which overlapped in time with the prosecution of the '790 and '791 applications, and understanding that the original patents covering ENBREL®, namely the '760 and '690 patents, were set to expire in 2012 and 2014, respectively, Immunex was highly motivated to secure additional patent protection for ENBREL® to stave off biosimilar competition.

220. As discussed above, Immunex achieved its goal of obtaining additional patent protection by submitting false statements to the Patent Office in August of 2007 by means of the First Lyman Declaration. Immunex then demonstrated a repeated pattern of advancing the false statements contained within the First Lyman Declaration (through at least its prosecuting attorneys) to the Board to obtain approval of the pending claims. Specifically, Dr. Lyman, Dr. Rin-Laures, and Dr. Sintich, each of whom was involved in either preparing or executing the declaration, submitting it to the Patent Office during prosecution of both the '790 and '791 applications, and/or making arguments based on it, engaged in affirmative egregious misconduct.

221. The misconduct before the Patent Office continued when Dr. Rin-Laures submitted the Third Lyman Declaration during the prosecution of the '791 application, which again contained a false statement about the percent identity between the Figure 4 and Smith sequences. Further misconduct includes the failure to draw to the Examiner's attention the change to Dr. Lyman's representations between his First and Third Declarations regarding his characterization of the comparison of Figure 4 with Smith (1990). Moreover, additional misconduct arises from the fact that neither Immunex nor its attorneys submitted the Third Lyman Declaration to the Patent Office during prosecution of the co-pending '790 application or

otherwise alerted it that Dr. Lyman's characterization of the comparison of Figure 4 with Smith (1990) in the First Lyman Declaration was incorrect.

222. Deceptive intent is the single most reasonable inference to be drawn in light of the foregoing repeated behavior of misconduct and surrounding circumstances. Stated differently, Dr. Lyman's false statements and Immunex's conduct of repeatedly relying on Dr. Lyman's false statements during prosecution demonstrates that the only plausible reason such misrepresentations were made was to deceive the Patent Office. This demonstrates specific intent to deceive.

223. Because Immunex obtained the '182 and '522 patents by knowingly and willfully misrepresenting material facts to the Patent Office, and thereby committed inequitable conduct, the'182 and '522 patents are unenforceable.

Other Defenses Reserved

224. Samsung Bioepis reserves the right to amend its Answer to include other Defenses.

RESPONSE TO PRAYER FOR RELIEF

Samsung Bioepis denies that Plaintiffs are entitled to any of the relief set forth in their "Prayer for Relief" or to any relief whatsoever.

Samsung Bioepis respectfully requests that this Court enter the following relief:

a. That an Order be entered dismissing Plaintiffs' complaint with prejudice and entering judgment in favor of Samsung Bioepis;

b. That an Order be entered that the manufacture, use, offer for sale, sale, and/or importation of the product that is the subject of Biologics License Application No. 761066 before expiration of the '225, '605, '631, '182, and '522 patents does not

and will not infringe any valid and enforceable claim the ’225, ’605, ’631, ’182, and ’522 patents;

c. That a declaration be issued under 28 U.S.C. § 2201 or 2202 that the manufacture, use, offer for sale, sale, and/or importation of the product that is the subject of Biologics License Application No. 761066 before expiration of the ’225, ’605, ’631, ’182, and ’522 patents does not and will not infringe any valid and enforceable claim the ’225, ’605, ’631, ’182, and ’522 patents;

d. That an Order be entered adjudging and decreeing that the claims of the ’225, ’605, ’631, ’182, and ’522 patents are invalid;

e. That a declaration be issued under 28 U.S.C. § 2201 or 2202 that the claims of the ’225, ’605, ’631, ’182, and ’522 patents are invalid;

f. That an Order be entered adjudging and decreeing that the ’182 and ’522 patents are void and/or unenforceable;

g. That a declaration be issued under 28 U.S.C. § 2201 or 2202 that the claims of the ’225, ’605, ’631, ’182, and ’522 patents are void and/or unenforceable;

h. That a declaration be issued under 28 U.S.C. § 2201 or 2202 that Samsung Bioepis has not failed to comply with any of the provisions of the Biologics Price Competition and Innovation Act (“BPICA”), including § 262(*l*)(8)(A).

i. That this case be adjudged and decreed an exceptional case under 35 U.S.C. § 285, and award Samsung Bioepis its attorneys’ fees and costs;

j. That the Court award all other and further relief as it deems just and proper.

Dated: August 5, 2019

By: s/ William C. Baton

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RULE 11.2 CERTIFICATION

United States Patent Nos. 8,063,182 ("the '182 Patent"), 8,163,522 ("the '522 Patent"), 7,915,225 ("the '225 Patent"), 8,119,605 ("the '605 Patent"), and 8,722,631 ("the '631 Patent") are the subject of the pending action in this judicial district *Immunex Corp. v. Sandoz Inc.*, Civil Action No. 2:16-cv-01118-CCC-MF.

I hereby certify that, to the best of my knowledge, the matter in controversy is not the subject of any other pending or anticipated litigation in any court or arbitration proceeding, nor are there any non-parties known to Samsung Bioepis that should be joined to this action. In addition, I recognize a continuing obligation during the course of this litigation to file and to serve on all other parties and with the Court an amended certification if there is a change in the facts stated in this original certification.

Dated: August 5, 2019

By: s/ William C. Baton

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